DOCUMENT RESUME

ED 097 225 SE 018 408

AUTHOR	Suydam, Marilyn N.
TITLE	A Categorized Listing of Research on Mathematics Education (K-12) 1964-1973.
INSTITUTION	ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
PUB DATE	Aug 74
NOTE	364p.
AVAILABLE FROM	Ohio State University, Center for Science and Mathematics Education, 244 Arps Hall, Columbus, Ohio 43210 ($5.75)
EDRS PRICE	MF-$0.75 HC-$17.40 PLUS POSTAGE
DESCRIPTORS	*Bibliographies; Doctoral Theses; Elementary School Mathematics; *Mathematics Education; *Research; Secondary School Mathematics; *Teacher Education
IDENTIFIERS	*ERIC SMEAC

ABSTRACT

This categorized listing is intended to help those who want a ready reference to research reports on mathematics education. Citations are made to over 3000 studies appearing in journals published in the United States, in DISSERTATION ABSTRACTS or DISSERTATION ABSTRACTS INTERNATIONAL, or in RESEARCH IN EDUCATION between 1964 and 1973. Entries are organized alphabetically under listings: (1) Articles on Elementary and Secondary School Mathematics (K-12) Research; (2) Dissertations on Elementary and Secondary School Mathematics (K-12) Research; (3) Articles on Mathematics Teacher Education Research; (4) Dissertations on Mathematics Teacher Education Research; (5) Research Listings, Reviews, and Summaries; and (6) Research Reports available through ERIC. The references on each list are not annotated; however, a categorized index is included indicating studies which pertain to a variety of mathematical topics. (DT)

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MATHEMATICS EDUCATION REPORTS

A Categorized Listing of Research on Mathematics Education (K-12)

1964-1973

Marilyn N. Suydam

ERIC Information Analysis Center for
Science, Mathematics and Environmental Education
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The Ohio State University
Columbus, Ohio 43210

August 1974

Mathematics Education Reports

Mathematics Education Reports are being developed to disseminate information concerning mathematics education documents analyzed at the ERIC Information Analysis Center for Science, Mathematics, and Environmental Education. These reports fall into three broad categories. Research reviews summarize and analyze recent research in specific areas of mathematics education. Resource guides identify and analyze materials and references for use by mathematics teachers at all levels. Special bibliographies announce the availability of documents and review the literature in selected interest areas of mathematics education. Reports in each of these categories may also be targeted for specific subpopulations of the mathematics education community. Priorities for the development of future Mathematics Education Reports are established by the advisory board of the Center, in cooperation with the National Council of Teachers of Mathematics, the Special Interest Group for Research in Mathematics Education, the Conference Board of the Mathematical Sciences, and other professional groups in mathematics education. Individual comments on past Reports and suggestions for future Reports are always welcomed by the editor.

This categorized listing is presented to help those readers who want a ready reference to research reports on mathematics education. Instead of having to search through several sources, one can consult this document for citations to over 3,000 studies. The categorization should aid those who are searching for information on a particular aspect of mathematics education to locate reports which will be pertinent.

The ERIC Information Analysis Center for Science, Mathematics, and Environmental Education is pleased to make this publication available as a Mathematics Education Report.

Jon L. Higgins
Associate Director for
Mathematics Education

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Acknowledgments

To someone who has not produced a document of this type, the task seems rather simple: indeed I made the error of thinking so myself, ahead of time. But that the task is not so simple can be attested to by Beverly Brooks, State College, Pennsylvania, who typed the bulk of the manuscript, and Louraine Wagner, Columbus, Ohio, who typed most of the remainder. And it can be affirmed by Jesse D. Parete and John Michael Bowling graduate students at The Ohio State University, to whom fell the task of checking the categorized lists for accuracy.

My appreciation is extended to all of them.

M. N. S.

A Categorized Listing of Research
on Mathematics Education (K-12)
1964-1973

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A Categorized Listing of Research on Mathematics Education (K-12)

1964-1973

There is no "magic" in the years 1964-1973: certainly much research--much significant research--was conducted and published prior to those years. And hopefully much more significant research will be published in 1974 and the years that follow! But with the vast increase in the amount of research on mathematics education published in the past decade, it seemed plausible to compile a ten-year listing. It is drawn from various sources[1]; the fact that researchers have had to consult several sources is also a reason for collating the collection.

This document is thus intended as a resource for those who want to explore the research on mathematics education. It consists of six alphabetical listings; the division is according to type of document and source. Thus, lists 1 and 2 contain, respectively, journal-published reports and dissertations on mathematics education, K-12. Lists 3 and 4 contain similar references for teacher education. List 5 includes reviews, summaries, and other lists, while list 6 includes citations for documents available from ERIC[2]; some of these documents have pre-1964 dates, but were listed in Research in Education, the ERIC reference guide, after that date.

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[1] Most of the reports in this document were previously included in one or more of the following:

(a) An Evaluation of Journal-Published Reports on Elementary School Mathematics, 1900-1965, Volumes I and II, by Marilyn N. Suydam. Unpublished doctoral dissertation, The Pennsylvania State University, 1967. (Order No. 68-3563)

(b) Interpretive Study of Research and Development on Elementary School Mathematics, Phase I, by Marilyn N. Suydam and C. Alan Riedesel. Final Report, June 1969. Volume II, Compilation of Research Reports. (ERIC: ED 030 017)

(c) Annotated Compilation of Research on Secondary School Mathematics, 1930-1970, by Marilyn N. Suydam. Final Report, February 1972. Volume I, Introduction; Compilation of Articles. (ERIC: ED 062 165) Volume II, Compilation of Dissertations; Summary and Conclusions. (ERIC: ED 062 166)

(d) Annual research listings in The Arithmetic Teacher (to 1970) and the Journal for Research in Mathematics Education.

The references on each list are not annotated—to include annotations would have resulted in a document prohibitively large.[3] However, a categorized index is included: it indicates studies which pertain to a variety of mathematical topics. Though it appears at the end, it can actually serve as a key for unlocking the listing to meet a specific need. Readers are urged to consult it first when they begin a search. It is not exhaustive, but hopefully the primary topics of each report have been cross-referenced. The user may find that as he reads a report, he may want to add it to other topics on the categorized list.

No claim is made for the completeness of these listings: they merely consist of those research reports appearing in journals published in the United States, in Dissertation Abstracts or Dissertation Abstracts International, or in Research in Education between 1964 and 1973 which the compiler has identified. Obviously, comprehensiveness has been attempted--but the user must remember that other reports of research which have appeared in books, monographs, non-American journals, and in various other types of publications, are not included here.

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[2] Other research documents are listed in Research in Education, but are available only from other sources.

[3] If the user desires annotations, he should consult the listings cited in footnote 1. It would be preferable, however, to consult the original research report, since annotations provide only a limited amount of information.

1. ELEMENTARY AND SECONDARY SCHOOL MATHEMATICS (K-12)
1964-1973

ARTICLES

Abrego, Mildred Brown. Children's Attitudes Toward Arithmetic. *Arith. Teach.* 13: 206-208; Mar. 1966.

Achenbach, Thomas M. Surprise and Memory as Indices of Concrete Operational Development. *Psychol. Reports* 33: 47-57; Aug. 1973.

Aftreth, Orville B. and MacEachern, Donald G. An Action Research Study in Arithmetic. *Arith. Teach.* 11: 30-32; Jan. 1964.

Ahr, Paul R. and Youniss, James. Reasons for Failure on the Class Inclusion Problem. *Child Develop.* 41: 131-143; Mar. 1970.

Aiken, Lewis R., Jr. Biodata Correlates of Attitudes Toward Mathematics in Three Age and Two Sex Groups. *Sch. Sci. Math.* 72: 386-395; May 1972.

Allen, Robert W. The Fourth "R." *Calif. J. Ed. Res.* 16: 75-79; Mar. 1965.

Alschuler, Alfred S. The Effects of Classroom Structure on Achievement Motivation and Academic Performance. *Ed. Tech.* 9: 19-24; Aug. 1969.

Alspaugh, John W. The Relationship of Grade Placement to Programming Aptitude and Fortran Programming Achievement. *J. Res. Math. Ed.* 2: 44-48; Jan. 1971.

Alspaugh, John W. and Delon, Floyd G. How Modern Is Today's Secondary Mathematics Curriculum? *Math. Teach.* 60: 50-55; Jan. 1967.

Alspaugh, John W.; Kerr, R. D.; and Reys, Robert E. Curriculum Change in Secondary School Mathematics. *Sch. Sci. Math.* 70: 170-176; Feb. 1970.

Anastasiow, Nicholas J.; Sibley, Sally A.; Leonhardt, Teresa M.; and Borich, Gary D. A Comparison of Guided Discovery, Discovery and Didactic Teaching of Math to Kindergarten Poverty Children. *Am. Ed. Res. J.* 7: 493-509; Nov. 1970.

Anderson, Gary J. Effects of Course Content and Teacher Sex on the Social Climate of Learning. *Am. Ed. Res. J.* 8: 649-663; Nov. 1971.

Anderson, James G. and Johnson, William H. Stability and Change Among Three Generations of Mexican-Americans: Factors Affecting Achievement. Am. Ed. Res. J. 8: 285-309; Mar. 1971.

Anttonen, Ralph G. A Longitudinal Study in Mathematics Attitude. J. Ed. Res. 62: 467-471; July/Aug. 1969.

Armstrong, Jenny R. Curricular and Instructional Factors Which Facilitate Mathematical Learning. J. Exp. Ed. 38: 5-15; Winter 1969.

Armstrong, Jenny R. Representational Modes as They Interact with Cognitive Development and Mathematical Concept Acquisition of the Retarded to Promote New Mathematical Learning. J. Res. Math. Ed. 3: 43-50; Jan. 1972.

Arnold, William R. and Hale, Ralph. An Investigation of Third-Grade Level Pupil's [sic] Ability in Geometry. Colo. J. Ed. Res. 10: 2-7; Summer 1971.

Ashbaugh, W. H. Effect on Achievement of Written Responses to Programmed Learning Material for Students of Differing Academic Ability. Psychol. Reports 14: 780-782; June 1964.

Ashlock, Robert B. A Test of Understandings for the Primary Grades. Arith. Teach. 15: 438-441; May 1968.

Austin, Gilbert R. and Prevost, Fernand. The Results of a Longitudinal Study in Mathematics in New Hampshire. Math. Teach. 65: 746-747; Dec. 1972.

Austin, Gilbert R. and Prevost, Fernand. Longitudinal Evaluation of Mathematical Computational Abilities of New Hampshire's Eighth and Tenth Graders, 1963-1967. J. Res. Math. Ed. 3: 59-64; Jan. 1972.

Austin, John C. Mental Mathematics Counts. Arith. Teach. 17: 337-338; Apr. 1970.

Ayers, Jerry B.; Bashaw, W. L.; and Wash, James A. A Study of the Validity of the Sixteen Personality Factor Questionnaire in Predicting High School Academic Achievement. Ed. & Psychol. Meas. 29: 479-484; Summer 1969.

Bachman, Alfred Morry. The Relationship Between a Seventh-Grade Pupil's Academic Self-Concept and Achievement in Mathematics. J. Res. Math. Ed. 1: 173-179; May 1970.

Baker, Eva L. The Effects of Manipulated Item Writing Constraints on the Homogeneity of Test Items. *J. Ed. Meas.* 8: 305-309; Winter 1971.

Baker, Eva L. Parents, Teachers, and Students as Data Sources for the Selection of Instructional Goals. *Am. Ed. Res. J.* 9: 403-411; Summer 1972.

Baker, Nancy E. and Sullivan, Edmund V. The Influence of Some Task Variables and of Socioeconomic Class on the Manifestation of Conservation of Number. *J. Genet. Psychol.* 116: 21-30; Mar. 1970.

Balow, Bruce and Curtin, James. Ability Grouping of Bright Pupils. *El. Sch. J.* 66: 321-326; Mar. 1966.

Balow, Irving H. Reading and Computation Ability as Determinants of Problem Solving. *Arith. Teach.* 11: 18-22; Jan. 1964.

Balow, Irving. The Effects of "Homogeneous" Grouping in Seventh-Grade Arithmetic. *Arith. Teach.* 11: 186-191; Mar. 1964.

Bassham, Harrell; Murphy, Michael; and Murphy, Katherine. Attitude and Achievement in Arithmetic. *Arith. Teach.* 11: 66-72; Feb. 1964.

Bassler, Otto C. Intermediate Versus Maximal Guidance - A Pilot Study. *Arith. Teach.* 15: 357-362; Apr. 1968.

Bassler, Otto C.; Curry, Dick; Hall, Wayne; and Mealy, Ed. An Investigation of Two Instructional Variables in Learning Nonmetric Geometry. *Sch. Sci. Math.* 71: 441-450; May 1971.

Bassler, Otto C.; Hill, Warren H., Jr.; Ingle, Josephine A.; and Sparks, Billie Earl. Comparison of Two Levels of Guidance in Teaching Elementary School Mathematics. *Sch. Sci. Math.* 71: 303-312; Apr. 1971.

Bat-Haee, Mohammad Ali. Conservation of Mass, Weight, and Volume in Intermediate Grades. *Psychol. Reports* 28: 163-168; Feb. 1971.

Bausell, R. Barker and Moody, William B. The Effect of Programed Review on 4th and 5th Grade Arithmetic Retention. *Sch. Sci. Math.* 72: 148-150; Feb. 1972.

Bausell, R. Barker; Moody, William B.; and Walzl, F. Neil. A Factorial Study of Tutoring Versus Classroom Instruction. *Am. Ed. Res. J.* 9: 591-597; Fall 1972.

Beal, Barry B. The Efficacy of Beginning the Study of Algebra at Different Times in the Eighth Grade - A Comparative Study. *Colo. J. Ed. Res.* 10: 27-30; Summer 1971.

Beamer, Robert H. and Lemke, Elmer A. Effects on Transfer of Training of Constant Versus Varied Training, Group Size, and Ability Level, in Elementary School Mathematics. *J. Res. Math. Ed.* 4: 20-25; Jan. 1973.

Beane, D. G. A Comparison of Linear and Branching Techniques of Programed Instruction in Plane Geometry. *J. Ed. Res.* 58: 319-326; Mar. 1965.

Beardslee, Edward C.; Gau, Gerald E.; and Heimer, Ralph T. Teaching for Generalization: An Array Approach to Equivalent Fractions. *Arith. Teach.* 20: 591-599; Nov. 1973.

Beckmann, Milton W. Ninth Grade Mathematical Competence - 15 Years Ago and Now. *Sch. Sci. Math.* 69: 315-319; Apr. 1969.

Beckmann, Milton William. Eighth Grade Mathematical Competence - 15 Years Ago and Now. *Arith. Teach.* 17: 334-335; Apr. 1970.

Beeson, Richard O. Immediate Knowledge of Results and Test Performance. *J. Ed. Res.* 66: 224-226; Jan. 1973.

Beilin, Harry and Gillman, Irene S. Number Language and Number Reversal Learning. *J. Exp. Child Psychol.* 5: 263-277; June 1967.

Belcastro, Frank P. Programmed Learning and Intelligence. *Sch. Sci. Math.* 66: 29-36; Jan. 1966.

Belcastro, Frank P. Relative Effectiveness of the Inductive and Deductive Methods of Programming Algebra. *J. Exp. Ed.* 34: 77-82; Spring 1966.

Bennett, Lloyd M. and Walker, Reba K. Training Subordinate Processes Involved in Categorization. *Sch. Sci. Math.* 71: 703-706; Nov. 1971.

Bergen, Patricia M. Action Research on Division of Fractions. *Arith. Teach.* 13: 293-295; Apr. 1966.

Berman, Linda. The High School Achievement of Former Two- and Three-Year Special Progress Junior High School Students. *Grad. Res. in Ed. & Related Disciplines* 1: 25-37; Nov. 1965.

Bhushan, Vidya; Jeffryes, James; and Nakamura, Irene. Large-Group Instruction in Mathematics Under Flexible Scheduling. *Math. Teach.* 61: 773-775; Dec. 1968.

Biddle, John C. Effectiveness of Two Methods of Instruction of High School Geometry on Achievement and Retention: A Two and One-Half Year Study. *Sch. Sci. Math.* 67: 689-694; Nov. 1967.

Bidwell, James K. Some Consequences of Learning Theory Applied to Division of Fractions. *Sch. Sci. Math.* 71: 426-434; May 1971.

Bierden, James E. Behavioral Objectives and Flexible Grouping in Seventh Grade Mathematics. *J. Res. Math. Ed.* 1: 207-217; Nov. 1970.

Bivens, Lyle W. Feedback Complexity and Self-Direction in Programmed Instruction. *Psychol. Reports* 14: 155-160; Feb. 1964.

Blackman, Leonard S. and Capobianco, Rudolph J. An Evaluation of Programmed Instruction with the Mentally Retarded Using Teaching Machines. *Am. J. Ment. Def.* 70: 262-269; Sept. 1965.

Bledsoe, Joseph C.; Brown, Iva D.; and Strickland, Arthur D. Factors Related to Pupil Observation Reports of Teachers and Attitudes Toward Their Teacher. *J. Ed. Res.* 65: 119-126; Nov. 1971.

Boe, Barbara L. A Study of the Ability of Secondary School Pupils to Perceive the Plane Sections of Selected Solid Figures. *Math. Teach.* 61: 415-421; Apr. 1968.

Boersma, Frederic; Wilson, Keri; Barham, Richard; and Muir, Walter. Effects of Arithmetic Problem Difficulty on Pupillary Dilation in Normals and Educable Retardates. *J. Exp. Child Psychol.* 9: 142-155; Apr. 1970.

Bohrnstedt, George W.; Lambert, Philip; and Borgatta, Edgar F. The Reliability and Validity of Quick Tests with High School Seniors. *J. Exp. Ed.* 39: 22-23; Summer 1971.

Bowers, Robert Garth. Study 1-4: The Effect of Triangle-Pair Configuration Variation on Achievement of Selected Classes of Instructional Objectives in Plane Geometry. *J. Res. Math. Ed.* 4: 110-113; March 1973.

Brace, Alec and Nelson, L. Doyal. The Preschool Child's Concept of Number. *Arith. Teach.* 12: 126-133; Feb. 1965.

Bradley, R. C. and Earp, N. Wesley. The Effective Teaching of Roman Numerals in Modern Mathematics Classes. *Sch. Sci. Math.* 66: 415-420; May 1966.

Brager, Gary L. Teacher Expectancy and Mathematics Achievement. J. Res. Math. Ed. 1: 88-94; Mar. 1970.

Braine, Martin D. S. Development of a Grasp of Transitivity of Length: A Reply to Smedslund. Child Develop. 35: 799-810; Sept. 1964.

Brainerd, Charles J. and Brainerd, Susan H. Order and Acquisition of Number and Quantity Conservation. Child Develop. 43: 1401-1406; Dec. 1972.

Branca, Nicholas A. and Kilpatrick, Jeremy. The Consistency of Strategies in the Learning of Mathematical Structures. J. Res. Math. Ed. 3: 132-140; May 1972.

Brandenburg, W. J. Modernization of School Mathematics in Holland. Am. Math. Monthly 74: 57-60; Jan. 1967.

Brekke, Beverly W.; Williams, John D.; and Harlow, Steven D. Conservation and Reading Readiness. J. Genet. Psychol. 123: 133-138; Sept. 1973.

Brewer, Emery. A Survey of Arithmetic Intraclass Grouping Practices. Arith. Teach. 13: 310-314; Apr. 1966.

Brinkmann, Erwin H. Programed Instruction as a Technique for Improving Spatial Visualization. J. Appl. Psychol. 50: 179-184; Apr. 1966.

Brophy, Jere E. Stability of Teacher Effectiveness. Am. Ed. Res. J. 10: 245-252; Summer 1973.

Brothers, Roy J. Arithmetic Computation: Achievement of Visually Handicapped Students in Public Schools. Excep. Child. 39: 575-576; Apr. 1973.

Broussard, Vernon; Fields, Albert; and Reusswig, James M. A Comprehensive Mathematics Program. AV Inst. 14: 43-44, 46; Feb. 1969.

Brown, Ann L. Conservation of Number and Continuous Quantity in Normal, Bright, and Retarded Children. Child Develop. 44: 376-379; June 1973.

Brown, G. W. Improving Instruction in Problem Solving in Ninth Grade General Mathematics. Sch. Sci. Math. 64: 341-346; May 1964.

Brown, Jerry L. Effects of Logical and Scrambled Sequences in Mathematical Materials on Learning with Programmed Instruction Materials. J. Ed. Psychol. 61: 41-45; Feb. 1970.

Brown, O. Robert, Jr. Using a Programmed Text to Provide an Efficient and Thorough Treatment of Solid Geometry Under Flexible Classroom Procedures. *Math. Teach.* 60: 492-502; May 1967.

Brown, Robert M. A Comparison of Two Approaches of Evaluating Students' Homework Assignments in Elementary Algebra. *Grad. Res. in Ed. & Related Disciplines* 2: 97-98; Apr. 1966.

Brownell, William A. Conceptual Maturity in Arithmetic Under Differing Systems of Instruction. *El. Sch. J.* 69: 151-163; Dec. 1968.

Brumbaugh, Douglas K. Isolation of Factors That Influence the Ability of Young Children to Associate a Solid with a Representation of That Solid. *Arith. Teach.* 18: 49-52; Jan. 1971.

Buchman, Aaron L. The Use of Calculators and Computers in Mathematics Instruction in New York State High Schools. *Sch. Sci. Math.* 69: 385-392; May 1969.

Burns, Paul C. and Yonally, James L. Does the Order of Presentation of Numerical Data in Multi-Steps Affect Their Difficulty? *Sch. Sci. Math.* 64: 267-270; Apr. 1964.

Cahen, Leonard S.; Romberg, Thomas A.; and Zwirner, Walter. The Estimation of Mean Achievement Scores for Schools by the Item-Sampling Technique. *Ed. & Psychol. Meas.* 30: 41-60; Spring 1970.

Cain, Ralph W. Relationships of Verbal Reasoning and Numerical Ability to Achievement in First-Year Algebra. *Sch. Sci. Math.* 66: 131-134; Feb. 1966.

Caldwell, James R.; Schrader, Donald R.; Michael, William B.; and Meyers, C. E. Structure-of-Intellect Measures and Other Tests as Predictors of Success in Tenth-Grade Modern Geometry. *Ed. & Psychol. Meas.* 30: 437-441; Summer 1970.

Calhoun, L. G. Number Conservation in Very Young Children: The Effect of Age and Mode of Responding. *Child Develop.* 42: 561-572; June 1971.

Call, Russell J. and Wiggin, Neal A. Reading and Mathematics. *Math. Teach.* 59: 149-157; Feb. 1966.

Callahan, John J. and Jacobson, Ruth S. An Experiment with Retarded Children and Cuisenaire Rods. *Arith. Teach.* 14: 10-13; Jan. 1967.

Callahan, Leroy G. and Passi, Sneh Lata. The Relationship Between the Ability to Conserve Length and Conceptual Tempo. *J. Res. Math. Ed.* 2: 36-43; Jan. 1971.

Callahan, Leroy and Passi, Sneh Lata. Textbooks, Transitions, and Transplants. Arith. Teach. 19: 381-385; May 1972.

Callahan, Leroy G. and Robinson, Mary L. Task-Analysis Procedures in Mathematics Instruction of Achievers and Underachievers. Sch. Sci. Math. 73: 578-584; Oct. 1973.

Callahan, Walter J. Adolescent Attitudes Toward Mathematics. Math. Teach. 64: 751-755; Dec. 1971.

Campbell, Vincent N. Self-Direction and Programed Instruction for Five Different Types of Learning Objectives. Psychol. in Sch. 1: 348-359; Oct. 1964.

Capps, Lelon R. and Cox, Linda Simon. Attitude Toward Arithmetic at the Fourth- and Fifth-Grade Levels. Arith. Teach. 16: 215-220; Mar. 1969.

Carey, Russell L. and Steffe, Leslie P. Before Children Can Measure. El. Sch. J. 71: 286-292; Feb. 1971.

Carlson, Jerry S. Height, Width, Their Multiplication and the Conservation of Substance. Calif. J. Ed. Res. 20: 16-20; Jan. 1969.

Carpenter, Paul W. and Fillmer, H. T. A Comparison of Teaching Machines and Programed Texts in the Teaching of Algebra I. J. Ed. Res. 58: 218-221; Jan. 1965.

Cartwright, G. Phillip. The Relationship Between Sequences of Instruction and Mental Abilities of Retarded Children. Am. Ed. Res. J. 8: 143-150; Jan. 1971.

Caruso, John L. and Resnick, Lauren B. Task Structure and Transfer in Children's Learning of Double Classification Skills. Child Develop. 43: 1297-1308; Dec. 1972.

Castaneda, Alberta M. A Mathematics Program for Disadvantaged Mexican-American First-Grade Children. Arith. Teach. 15: 413-419; May 1968.

Cathcart, W. George. The Relationship Between Primary Students' Rationalization of Conservation and Their Mathematical Achievement. Child Develop. 42: 755-765; Sept. 1971.

Cathcart, W. George and Liedtke, Werner. Reflectiveness/Impulsiveness and Mathematics Achievement. Arith. Teach. 16: 563-567; Nov. 1969.

Cawley, John F. and Goodman, John O. Interrelationships Among Mental Abilities, Reading, Language Arts, and Arithmetic with the Mentally Handicapped. Arith. Teach. 15: 631-636; Nov. 1968.

Cech, Joseph P. The Effect of the Use of Desk Calculators on Attitude and Achievement with Low-Achieving Ninth Graders. Math. Teach. 65: 183-186; Feb. 1972.

Chase, Clinton I. The Control of Ability to Learn in the Comparison of Extreme Groups. J. Ed. Res. 57: 495-497; May/June 1964.

Christensen, Donald J. The Effect of Discontinued Grade Reporting on Pupil Learning. Arith. Teach. 15: 724-726; Dec. 1968.

Ciborowski, Tom and Cole, Michael. A Cross-Cultural Study of Conjunctive and Disjunctive Concept Learning. Child Develop. 43: 774-789; Sept. 1972.

Cicirelli, Victor G. The Effect of Sibling Relationship on Concept Learning of Young Children Taught by Child-Teachers. Child Develop. 43: 282-287; Mar. 1972.

Clark, Edward T. Sex Differences in the Perception of Academic Achievement Among Elementary School Children. J. Psychol. 67: 249-256; Nov. 1967.

Clarke, H. Harrison and Drowatzky, John N. Mental, Social, and Physical Characteristics of Boys Underaged and Modal-Aged in Elementary School. El. Sch. J. 73: 26-35; Oct. 1972.

Cleveland, Gerald Arthur and Bosworth, Dorothy L. A Study of Certain Psychological and Sociological Characteristics as Related to Arithmetic Achievement. Arith. Teach. 14: 383-387; May 1967.

Clifford, Margaret M. and Cleary, T. Anne. The Relationship Between Children's Academic Performance and Achievement Accountability. Child Develop. 43: 647-655; June 1972.

Collis, K. F. A Technique for Studying Concept Formation in Mathematics. J. Res. Math. Ed. 2: 12-22; Jan. 1971.

Coon, Robert C. and Odom, Richard D. Transitivity and Length Judgments as a Function of Age and Social Influence. Child Develop. 39: 1133-1144; Dec. 1968.

Coppedge, Floyd L. and Hanna, Gerald S. Comparison of Teacher-Written and Empirically Derived Distractors to Multiple-Choice Test Questions. J. Res. Math. Ed. 2: 299-303; Nov. 1971.

Coulter, Myron L. Verbal Problem Solving in the Intermediate Grades. Read. & Inquiry 10: 303-306; 1965.

Coxford, Arthur F., Jr. The Effects of Instruction on the Stage Placement of Children in Piaget's Seriation Experiments. Arith. Teach. 11: 4-9; Jan. 1964.

Coyle, Paul J. A Study of the Predictive Validity of the Sequential Tests of Educational Progress. J. Sch. Psychol. 5: 317-318; Sept. 1967.

Craig, Grace J.; Love, Jean A.; and Olim, Ellis G. Perceptual Judgments in Piaget's Conservation-of-Liquid Problem. Child Develop. 44: 372-375; June 1973.

Crawford, Alan N. A Pilot Study of Computer-Assisted Drill and Practice in Seventh Grade Remedial Mathematics. Calif. J. Ed. Res. 21: 170-181; Sept. 1970.

Crist, Robert L. Use of a Programed Multiplication Text Under Group-Paced and Individual-Paced Conditions. AV Comm. R. 14: 507-513; Winter 1966.

Cromack, Norman E. An Assessment of a Mathematics League as Judged by Its Participants. Math. Teach. 63: 432-438; May 1970.

Cronin, Robert Emmet. The Effect of Varying Amounts of Traditional and Modern Mathematics Instruction Relative to Sex and Intellectual Ability on Both the Traditional and Modern Mathematics Achievement of Eighth Grade Pupils. Catholic Ed. R. 65: 548-549; Dec. 1967.

Daehler, Marvin W. Children's Manipulation of Illusory and Ambiguous Stimuli, Discriminative Performance, and Implications for Conceptual Development. Child Develop. 41: 225-241; Mar. 1970.

Daehler, Marvin W. Spontaneous Measurement in Young Children: A Re-examination. J. Genet. Psychol. 120: 27-38; Mar. 1972.

Darnell, C. D. and Bourne, L. E., Jr. Effects of Age, Verbal Ability, and Pretraining with Component Concepts on the Performance of Children in a Bidimensional Classification Task. J. Ed. Psychol. 61: 66-71; Feb. 1970.

D'Augustine, Charles H. Topics in Geometry and Point Set Topology - A Pilot Study. *Arith. Teach.* 11: 407-412; Oct. 1964.

D'Augustine, Charles. Factors Related to Achievement with Selected Topics in Geometry and Topology. *Arith. Teach.* 13: 192-197; Mar. 1966.

Davidson, Walter W. and Gibney, Thomas C. Evaluation of a Modern Mathematics Program. *Sch. Sci. Math.* 69: 364-366; May 1969.

Davis, Edward J. A Study of the Ability of School Pupils to Perceive and Identify the Plane Sections of Selected Solid Figures. *J. Res. Math. Ed.* 4: 132-140; May 1973.

Degnan, Joseph Arthur. General Anxiety and Attitudes Toward Mathematics in Achievers and Underachievers in Mathematics. *Grad. Res. in Ed. & Related Disciplines* 3: 49-62; Apr. 1967.

Denmark, Tom. An Intuitive Introduction to the Euclidean Concept of Betweenness. *Arith. Teach.* 15: 683-686; Dec. 1968.

Denmark, Thomas and Kalin, Robert. Suitability of Teaching Geometric Construction in Upper Elementary Grades - A Pilot Study. *Arith. Teach.* 11: 73-80; Feb. 1964.

Denney, Nancy Wadsworth. A Developmental Study of Free Classification in Children. *Child Develop.* 43: 221-232; Mar. 1972.

Devine, Donald F. Student Attitudes and Achievement: A Comparison Between the Effects of Programmed Instruction and Conventional Classroom Approach in Teaching Algebra I. *Math. Teach.* 61: 296-301; Mar. 1968.

DeVries, David L. and Edwards, Keith J. Learning Games and Student Teams: Their Effects on Classroom Process. *Am. Ed. Res. J.* 10: 307-318; Fall 1973.

Diedrich, Richard C. and Glennon, Vincent J. The Effects of Studying Decimal and Nondecimal Numeration Systems on Mathematical Understanding, Retention, and Transfer. *J. Res. Math. Ed.* 1: 162-172; May 1970.

Dill, Nasim and Gotts, Edward Earl. Improvement of Arithmetic Self Concept Through Combined Positive Reinforcement, Peer Interaction, and Sequential Curriculum. *J. Sch. Psychol.* 9: 462-472; 1971.

D'Mello, Sydney and Willemsen, Eleanor. The Development of the Number Concept: A Scalogram Analysis. *Child Develop.* 40: 681-688; Sept. 1969.

Dobbs, Virginia and Neville, Donald. The Effect of Nonpromotion on the Achievement of Groups Matched from Retained First Graders and Promoted Second Graders. *J. Ed. Res.* 60: 472-475; July/Aug. 1967.

Doherty, Anne and Wunderlich, Richard A. Effect of Secondary Reinforcement Schedules on Performance of Problem-Solving Tasks. *J. Exp. Psychol.* 77: 105-108; May 1968.

Dow, Sister Mary Stephanie. A Study of the Technical and Semi-Technical Vocabulary of Arithmetic in Grades Five and Six. *Catholic Ed. R.* 64: 57; Jan. 1967.

Duncan, Roger. An Experimental Study of the Effect of Parents' Knowledge on Study Performance in SMSG Mathematics. *J. Ed. Res.* 58: 135-137; Nov. 1964.

Dunkley, M. E. Some Number Concepts of Disadvantaged Children. *Arith. Teach.* 12: 359-361; May 1965.

Dunkley, M. E. Mathematics and the Disadvantaged. *El. Sch. J.* 73: 44-49; Oct. 1972.

Dutton, Wilbur H. Teaching Time Concepts to Culturally Disadvantaged Primary-Age Children. *Arith. Teach.* 14: 358-364; May 1967.

Dutton, Wilbur H. Another Look at Attitudes of Junior High School Pupils Toward Arithmetic. *El. Sch. J.* 68: 265-268; Feb. 1968.

Dutton, Wilbur H. New Mathematics for Ethiopian Elementary Schools. *Arith. Teach.* 15: 115-125; Feb. 1968.

Dutton, Wilbur H. and Blum, Martha Perkins. The Measurement of Attitudes Toward Arithmetic with a Likert-Type Test. *El. Sch. J.* 68: 259-264; Feb. 1968.

Dutton, Wilbur H. and Riggs, Corinne Whitlow. Programmed Instruction on Graphs with Implications for Curriculum Improvements. *Calif. J. Ed. Res.* 20: 8-15; Jan. 1969.

Earhart, Eileen. Evaluating Certain Aspects of a New Approach to Mathematics in the Primary Grades. *Sch. Sci. Math.* 64: 715-720; Nov. 1964.

Easterday, Kenneth E. An Experiment with Low Achievers in Arithmetic. *Math. Teach.* 57: 462-468; Nov. 1964.

Easterday, Kenneth and Easterday, Helen. Ninth-Grade Algebra, Programmed Instruction, and Sex Differences: An Experiment. Math. Teach. 61: 302-307; Mar. 1968.

Ediger, Marlow. The Student Teacher and Pupil Achievement in Elementary School Arithmetic. Sch. Sci. Math. 65: 697-700; Nov. 1965.

Edwards, R. Philip; Alley, Gordon R.; and Snider, Bill. Academic Achievement and Minimal Brain Dysfunction in Mentally Retarded Children. Excep. Child. 37: 539-540; Mar. 1971.

Elkind, David. Discrimination, Seriation, and Numeration of Size and Dimensional Differences in Young Children: Piaget Replication Study VI. J. Genet. Psychol. 104: 275-296; Apr. 1964.

Elkind, David; Anagnostopoulou, Rena; and Malone, Susan. Determinants of Part-Whole Perception in Children. Child Develop. 41: 391-397; June 1970.

Elsner, Priscilla Jo. Criterion Referenced Assessment and Its Classroom Uses as Viewed by Teachers. Sch. Sci. Math. 73: 730-734; Dec. 1973.

Engle, Carol D. and Lerch, Harold H. A Comparison of First-Grade Children's Abilities on Two Types of Arithmetical Practice Exercises. Sch. Sci. Math. 71: 327-334; Apr. 1971.

Estes, Betsy and Combs, Ann. Perception of Quantity. J. Genet. Psychol. 108: 333-336; June 1966.

Evans, Franklin R. and Pike, Lewis W. The Effects of Instruction for Three Mathematics Item Formats. J. Ed. Meas. 10: 257-272; Winter 1973.

Evans, John W., Jr. The Effect of Pupil Mobility Upon Academic Achievement. Na. El. Prin. 45: 18-22; Apr. 1966.

Farris, Dan C. Study 1-2: An Exploration of Selected Relationships Among the Enactive, Iconic, and Symbolic Modes of Representation. J. Res. Math. Ed. 4: 104-105; Mar. 1973.

Feigenbaum, Kenneth D. A Pilot Investigation of the Effects of Training Techniques Designed to Accelerate Children's Acquisition of Conservation of Discontinuous Quantity. J. Genet. Psychol. 119: 13-23; Sept. 1971.

Feigenbaum, Kenneth D. and Sulkin, Howard. Piaget's Problem of Conservation of Discontinuous Quantities: A Teaching Experience. *J. Genet. Psychol.* 105: 91-97; July 1964.

Fejfar, James L. ISU Lab School Fourth Graders Learn Through CAI. *Contem. Ed.* 40: 296-297; Apr. 1969.

Feldhake, Herbert J. Student Acceptance of the New Mathematics Programs. *Arith. Teach.* 13: 14-19; Jan. 1966.

Feldhusen, John F.; Thurston, John R.; and Benning, James J. Classroom Behavior, Intelligence, and Achievement. *J. Exp. Ed.* 36: 82-87; Winter 1967.

Feldhusen, John F.; Treffinger, Donald J.; and Elias, Robert M. Prediction of Academic Achievement with Divergent and Convergent Thinking and Personality Variables. *Psychol. in Sch.* 7: 46-52; Jan. 1970.

Feldhusen, John F.; Treffinger, Donald J.; Van Mondfrans, Adrian P.; and Ferris, Donald R. The Relationship Between Academic Grades and Divergent Thinking Scores Derived from Four Different Methods of Testing. *J. Exp. Ed.* 40: 35-40; Fall 1971.

Feldman, S. Shirley. Children's Understanding of Negation as a Logical Operation. *Genet. Psychol. Monog.* 85: 3-49; Feb. 1972.

Fennema, Elizabeth H. The Relative Effectiveness of a Symbolic and a Concrete Model in Learning a Selected Mathematical Principle. *J. Res. Math. Ed.* 3: 233-238; Nov. 1972.

Figurelli, Jennifer C. and Keller, Harold R. The Effects of Training and Socioeconomic Class Upon the Acquisition of Conservation Concepts. *Child Develop.* 43: 293-298; Mar. 1972.

Fincher, Glen E. and Fillmer, H. T. Programed Instruction in Elementary Arithmetic. *Arith. Teach.* 12: 19-23; Jan. 1965.

Fischbein, Efraim; Pampu, Ileana; and Manzat, Ion. Comparison of Ratios and the Chance Concept in Children. *Child Develop.* 41: 377-389; June 1970.

Fletcher, Robert F. An Investigation of the Effect of an Operationally Defined Word on Conservation-of-Number Responses. *Arith. Teach.* 17: 255-261; Mar. 1970.

Flournoy, Frances. Understanding Relationships: An Essential for Solving Equations. El. Sch. J. 64: 214-217; Jan. 1964.

Flournoy, Frances. Applying Basic Mathematical Ideas in Arithmetic. Arith. Teach. 11: 104-108; Feb. 1964.

Flournoy, Frances. A Study of Pupils' Understanding of Arithmetic in the Intermediate Grades. Sch. Sci. Math. 47: 325-333; Apr. 1967.

Flournoy, Frances. A Study of Pupils' Understanding of Arithmetic in the Primary Grades. Arith. Teach. 14: 481-485; Oct. 1967.

Flournoy, Frances. The Development of Arithmetic Understanding Tests for Primary and Intermediate Levels. J. Ed. Res. 62: 73-76; Oct. 1968.

Flynn, John T. Contribution of a Non-Cognitive Variable to Geometry Achievement Using an Auto-Instructional Procedure. J. Ed. Res. 62: 449-452; July/Aug. 1969.

Flynn, John T. and Mauser, August J. Contribution of a Non-Cognitive Variable to Achievement of Gifted Students Using Programmed Instruction. Contem. Ed. 42: 134-138; Jan. 1971.

Ford, Leroy H., Jr. Predictive Versus Perceptual Responses to Piaget's Water-Line Task and Their Relation to Distance Conservation. Child Develop. 41: 193-204; Mar. 1970.

Foster, John. An Exploratory Attempt to Assess Creative Ability in Mathematics. Primary Math. 8: 2-7; Apr. 1970.

Fremer, John; Coffman, William E.; and Taylor, Philip H. The College Board Scholastic Aptitude Test as a Predictor of Academic Achievement in Secondary Schools in England. J. Ed. Meas. 5: 235-241; Fall 1968.

Freyberg, P. S. Concept Development in Piagetian Terms in Relation to School Attainment. J. Ed. Psychol. 57: 164-168; June 1966.

Friebel, Allen C. Measurement Understandings in Modern School Mathematics. Arith. Teach. 14: 476-480; Oct. 1967.

Gabor, Georgia M. Teaching Methods and Incentives in Relation to Junior High Mathematics Achievement. Calif. J. Ed. Res. 23: 56-70; Mar. 1972.

Gavurin, Lester L. Two NSF-Supported Projects for Teachers of Advanced Placement Calculus. *Math. Teach.* 64: 361-366; Apr. 1971.

Gawronski, Jane Donnelly. Inductive and Deductive Learning Styles in Junior High School Mathematics: An Exploratory Study. *J. Res. Math. Ed.* 3: 239-247; Nov. 1972.

Gay, Lorraine R. Use of a Retention Index for Mathematics Instruction. *J. Ed. Psychol.* 63: 466-472; Oct. 1972.

Gay, Lorraine R. Temporal Position of Reviews and Its Effect on the Retention of Mathematical Rules. *J. Ed. Psychol.* 64: 171-182; Apr. 1973.

Gelman, Rochel. Conservation Acquisition: A Problem of Learning to Attend to Relevant Attributes. *J. Exp. Child Psychol.* [illegible]: 167-187; Apr. 1969.

Gelman, Rochel. Logical Capacity of Very Young Children: Number Invariance Rules. *Child Develop.* 43: 75-90; Mar. 1972.

Gelman, Rochel and Weinberg, Denise Hootstein. The Relationship Between Liquid Conservation and Compensation. *Child Develop.* 43: 371-383; June 1972.

Giles, George C., Jr. Predictive Validity of Progressive Matrices and Two Other Nonlanguage Tests of Mental Ability. *J. Ed. Meas.* 1: 65-67; June 1964.

Gilmary, Sister. Transfer Effects of Reading Remediation to Arithmetic Computation When Intelligence is Controlled and All Other School Factors Are Eliminated. *Arith. Teach.* 14: 17-20; Jan. 1967.

Ginsberg, Rose. Number and Color Responses in the Young Child. *J. Exp. Child Psychol.* 7: 265-273; Apr. 1969.

Gipson, Joella. Use of the Environment and Discovery in Teaching Decimals to Second Grade Children. *Sch. Sci. Math.* 71: 737-741; Nov. 1971.

Glaser, Robert; Reynolds, James H.; and Fullick, Margaret G. Studies of the Use of Programmed Instruction in the Intact Classroom. *Psychol. in Sch.* 3: 318-333; Oct. 1966.

Glavach, Mathew and Stoner, Donovan. Teaching the Unteachables. *Calif. J. Ed. Res.* 21: 111-119; May 1970.

Glavin, John P.; Quay, Herbert C.; Annesley, Frederick R.; and Werry, John S. An Experimental Resource Room for Behavior Problem Children. *Excep. Child.* 38: 131-137; Oct. 1971.

Glick, Joseph and Wapner, Seymour. Development of Transitivity: Some Findings and Problems of Analysis. *Child Develop.* 39: 621-638; June 1968.

Goldberg, Susan. Probability Judgments by Preschool Children: Task Conditions and Performance. *Child Develop.* 37: 157-167; Mar. 1966.

Goldschmid, Marcel L. The Relation of Conservation to Emotional and Environmental Aspects of Development. *Child Develop.* 39: 579-589; June 1968.

Goldschmid, Marcel and Bentler, P. M. The Dimensions and Measurement of Conservation. *Child Develop.* 39: 787-802; Sept. 1968.

Goodnow, Jacqueline J. and Bethon, Gloria. Piaget's Tasks: The Effects of Schooling and Intelligence. *Child Develop.* 37: 573-582; Sept. 1966.

Goodstein, H. A.; Cawley, J. F.; Gordon, S.; and Helfgott, J. Verbal Problem Solving Among Educable Mentally Retarded Children. *Am. J. Ment. Def.* 76: 238-241; Sept. 1971.

Goodwin, William L. Effect of Selected Methodological Conditions on Dependent Measures Taken After Classroom Experimentation. *J. Ed. Psychol.* 57: 350-358; Dec. 1966.

Goolsby, Thomas M., Jr. Appropriateness of Subtests in Achievement Tests Selection. *Ed. & Psychol. Meas.* 31: 969-972; Winter 1971.

Goolsby, Thomas M., Jr. and Frary, Robert B. Effect of Massive Educational Intervention on Achievement of First Grade Students. *J. Exp. Ed.* 39: 46-52; Fall 1970.

Gottfried, Nathan W. The Relationship Between Concepts of Conservation of Length and Number. *J. Genet. Psychol.* 114: 85-91; Mar. 1969.

Grafft, William. A Study of Behavioral Performances Within the Structure of Multiplication. *Arith. Teach.* 17: 335-337; Apr. 1970.

Grafft, William D. and Ruddell, Arden K. Cognitive Outcomes of the S.M.S.G. Mathematics Program in Grades 4, 5, and 6. *Arith. Teach.* 15: 161-165; Feb. 1968.

Graham, William A. Individualized Teaching of Fifth and Sixth Grade Arithmetic. Arith. Teach. 11: 233-234; Apr. 1964.

Graubard, Paul S. The Extent of Academic Retardation in a Residential Treatment Center. J. Ed. Res. 58: 78-80; Oct. 1964.

Gray, Roland F. An Experiment in the Teaching of Introductory Multiplication. Arith. Teach. 12: 199-203; Mar. 1965.

Gray, Roland F. An Approach to Evaluating Arithmetic Understandings. Arith. Teach. 13: 187-191; Mar. 1966.

Gray, Roland F. and Allison, Donald E. An Experimental Study of the Relationship of Homework to Pupil Success in Computation with Fractions. Sch. Sci. Math. 71: 339-346; Apr. 1971.

Gray, Susan W. and Klaus, Rupert A. The Early Training Project: A Seventh-Year Report. Child Develop. 41: 909-924; Dec. 1970.

Greabell, Leon. The Effect of Three Different Methods of Implementation of Mathematics Programs on Children's Achievement in Mathematics. Arith. Teach. 16: 288-291; Apr. 1969.

Greabell, Leon C., Jr. and Uprichard, A. Edward. Distar Mathematics Program and Two Communication Skills of Poor-Risk Kindergartners. Psychol. Reports 33: 126; Aug. 1973.

Greatsinger, Calvin. An Experimental Study of Programed Instruction in Division of Fractions. AV Comm. R. 16: 87-90; Spring 1968.

Greenfeld, Norman and Finkelstein, Elsie L. A Comparison of the Characteristics of Junior High School Students. J. Genet. Psychol. 117: 37-50; Sept. 1970.

Groen, Guy J. and Poll, Margaret. Subtraction and the Solution of Open Sentence Problems. J. Exp. Child Psychol. 16: 292-302; Oct. 1973.

Grouws, Douglas A. Open Sentences: Some Instructional Considerations from Research. Arith. Teach. 19: 595-599; Nov. 1972.

Gruen, Gerald E. Experiences Affecting the Development of Number Conservation in Children. Child Develop. 36: 936-979; Dec. 1965.

Guilford, J. P. Hoepfner, Ralph; and Peterson, Hugh. Predicting Achievement in Ninth-Grade Mathematics from Measures of Intellectual-Aptitude Factors. *Ed. & Psychol. Meas.* 25: 659-682; Fall. 1965.

Gupta, Ram K. Treatment Comparisons: Item Responses in Multi-Factor Repeated Measurements Designs. *J. Exp. Ed.* 37: 26-29; Summer 1969.

Halford, Graeme S. An Experimental Analysis of the Criteria Used by Children to Judge Quantities. *J. Exp. Child Psychol.* 8: 314-327; Oct. 1969.

Halford, G. S. and Fullerton, T. J. A Discrimination Task Which Induces Conservation of Number. *Child Develop.* 41: 205-213; Mar. 1970.

Hall, Lucien T., Jr. The Prediction of Success in Each of Six Four-Year Selections of Secondary Mathematics Courses. *Sch. Sci. Math.* 71: 693-696; Nov. 1971.

Halpern, Esther. The Effects of Incompatibility Between Perception and Logic in Piaget's Stage of Concrete Operations. *Child Develop.* 36: 491-497; June 1965.

Hambourger, James N. Grouping for Arithmetic Increases Pupil Growth. *Chicago Sch. J.* 45: 362-365; May 1964.

Haney, Joanne H. and Hooper, Frank H. A Developmental Comparison of Social Class and Verbal Ability Influences on Piagetian Tasks. *J. Genet. Psychol.* 122: 235-245; June 1973.

Hanna, Gerald S. An Attempt to Validate Standard Kuder Scales and an Empirically-Derived Interest Scale for Predicting Success in High School Geometry. *Ed. & Psychol. Meas.* 26: 445-448; Summer 1966.

Hanna, Gerald S. The Use of Students' Predictions of Success in Geometry and Year of High School to Augment Predictions Made from Test Scores and Past Grades. *J. Ed. Meas.* 4: 137-141; Fall 1967.

Hanna, Gerald S. Testing Students' Ability To Do Geometric Proofs: A Comparison of Three Objective Item Types. *J. Res. Math. Ed.* 2: 213-217; May 1971.

Hanna, Gerald S.; Bligh, Harold F.; and Lenke, Joanne M. Student-Reported Grades as Predictors. *Personnel & Guid. J.* 48: 465-468; Feb. 1970.

Hanna, Gerald S.; Bligh, Harold F.; Lenke, Joanne M.; and Orleans, Joseph B. Predicting Algebra Achievement with an Algebra Prognosis Test, IQs, Teacher Predictions, and Mathematics Grades. Ed. & Psychol. Meas. 29: 903-907; Winter 1969.

Hanna, Gerald S. and Lenke, Joanne M. Moderator Variables in Predicting Geometry Success. Sch. Sci. Math. 70: 299-302; Apr. 1970.

Harper, Harold E.; Steffe, Leslie P.; and Van Engen, Henry. An Evaluation of Teaching Conservation of Numerousness. Sch. Sci. Math. 69: 287-296; Apr. 1969.

Harris, Lauren; Schaller, M. Joseph; and Mitler, Merrill M. The Effects of Stimulus Type on Performance in a Color-Form Sorting Task with Preschool, Kindergarten, First-Grade, and Third-Grade Children. Child Develop. 41: 177-191; Mar. 1970.

Harrison, Forest I. Opportunity As It Is Related To Home Background and School Performance. Sch. R. 77: 144-151; June 1969.

Hartlein, Marion L. Use of Items with Coded Numbers for Measuring Understanding of Elementary Mathematical Concepts. Arith. Teach. 13: 540-545; Nov. 1966.

Harvey, Lois F. and Kyte, George C. Zero Difficulties in Multiplication. Arith. Teach. 12: 45-50; Jan. 1965.

Hatfield, Larry L. and Kieren, Thomas E. Computer-Assisted Problem Solving in School Mathematics. J. Res. Math. Ed. 3: 99-112; Mar. 1972.

Heard, Ida Mae. Mathematical Concepts and Abilities Possessed by Kindergarten Entrants. Arith. Teach. 17: 340-341; Apr. 1970.

Heddens, James W. and Smith, Kenneth J. The Readability of Elementary Mathematics Books. Arith. Teach. 11: 466-468; Nov. 1964.

Heitzman, Andrew J. Effects of a Token Reinforcement System on the Reading and Arithmetic Skills Learnings of Migrant Primary School Pupils. J. Ed. Res. 63: 455-458; July/Aug. 1970.

Henderson, Edmund H. and Long, Barbara H. Self Social Concepts in Relation to Reading Arithmetic. Vistas in Read., Part I 11: 576-581; 1966.

Henderson, George. Math Tests Analyzed. Wisc. J. Ed. 100: 16-17, 27; May 1968.

Henderson, Kenneth B. and Rollins, James H. A Comparison of Three Stratagems for Teaching Mathematical Concepts and Generalizations by Guided Discovery. Arith. Teach. 14: 503-508; Nov. 1967.

Hendrickson, Dean. What Can Children Tell Us About the Teaching of Science and Mathematics? Sch. Sci. Math. 69: 773-777; Dec. 1969.

Hendrickson, Gerry F. The Effect of Differential Option Weighting on Multiple-Choice Objective Tests. J. Ed. Meas. 8: 291-296; Winter 1971.

Hervey, Margaret A. Children's Responses to Two Types of Multiplication Problems. Arith. Teach. 13: 288-292; Apr. 1966.

Hess, Robert D. and Tenezakis, Maria D. Selected Findings from "The Computer as a Socializing Agent: Some Socioaffective Outcomes of CAI." AV Comm. R. 3: 311-325; Fall 1973.

Hicks, Randall C. Elementary Series and Texts for Teachers - How Well Do They Agree? Arith. Teach. 15: 266-270; Mar. 1968.

Higgins, Conwell and Rusch, Reuben. Remedial Teaching of Multiplication and Division: Programmed Textbook Versus Workbook - A Pilot Study. Arith. Teach. 12: 32-38; Jan. 1965.

Higgins, James E. An Investigation of the Effects of Non-Decimal Numeration Instruction on Mathematical Understanding. Sch. Sci. Math. 72: 293-297; Apr. 1972.

Higgins, Jon L. Attitude Changes in a Mathematics Laboratory Utilizing a Mathematics-Through-Science Approach. J. Res. Math. Ed. 1: 43-56; Jan. 1970.

Hill, John P. Similarity and Accordance Between Parents and Sons in Attitudes Toward Mathematics. Child Develop. 38: 777-791; Sept. 1967.

Hillman, Bill W. Two Methods of Facilitating Classroom Learning: Implications for the Counselor-Consultant. Sch. Couns. 17: 131-137; Nov. 1969.

Hillman, Bill W. The Effect of Knowledge of Results and Token Reinforcement on the Arithmetic Achievement of Elementary School Children. Arith. Teach. 17: 676-682; Dec. 1970.

Hilton, Thomas L. and Myers, Albert E. Personal Background, Experience and School Achievement: An Investigation of the Contribution of Questionnaire Data to Academic Prediction. J. Ed. Meas. 4: 69-80; Summer 1967.

Hirschbuhl, John J. Study 1-5: An Exploration of Selected Transitivity and Conjunctive Relationships Among the Enactive, Iconic, and Symbolic Modes of Representation. J. Res. Math. Ed. 4: 113-115; Mar. 1973.

Hoemann, Harry W. and Ross, Bruce M. Children's Understanding of Probability Concepts. Child Develop. 42: 221-236; Mar. 1971.

Hollis, Loye Y. Why Teach Numeration? Arith. Teach. 11: 94-95; Feb. 1964.

Hollis, Loye Y. A Study to Compare the Effect of Teaching First and Second Grade Mathematics by the Cuisenaire-Gattegno Method with a Traditional Method. Sch. Sci. Math. 65: 683-687; Nov. 1965.

Hollos, Marida and Cowan, Philip A. Social Isolation and Cognitive Development: Logical Operations and Role-Taking Abilities in Three Norwegian Social Settings. Child Develop. 44: 630-641; Sept. 1973.

Holly, Keith A.; Purl, Mabel C.; Dawson, Judith A.; and Michael, William B. The Relationship of an Experimental Form of the Mathematics Self-Concept Scale to Cognitive and Noncognitive Variables for a Sample of Seventh-Grade Pupils in a Middle-Class Southern California Community. Ed. & Psychol. Meas. 33: 505-508; Summer 1973.

Holt, Gary L. Effect of Reinforcement Contingencies in Increasing Programmed Reading and Mathematics Behaviors in First-Grade Children. J. Exp. Child Psychol. 12: 362-369; Dec. 1971.

Holtan, Boyd. Motivation and General Mathematics Students. Math. Teach. 57: 20-25; Jan. 1964.

Holtan, Boyd. An Experimental Study of Patterns of Presenting Transitivity Statements. Math. Teach. 40: 257-258; Mar. 1967.

Hooper, Frank H. Piaget's Conservation Tasks: The Logical and Developmental Priority of Identity Conservation. J. Exp. Child Psychol. 8: 234-249; Oct. 1969.

Hopkins, Layne V. Study 3-2: An Exploration of Transitivities Formulated from a Set of Piagetian-Derived Operations and Their Implications in Traversing Learning Hierarchies. *J. Res. Math. Ed.* 4: 121-123; Mar. 1973.

Hostetler, Robert P. Study 2-1: An Exploration of the Effect of Selected Sequence Variables on Student Choice in the Use of Algorithms. *J. Res. Math. Ed.* 4: 115-118; Mar. 1973.

Houtz, John C.; Moore, J. William; and Davis, J. Kent. Effects of Different Types of Positive and Negative Instances in Learning "Nondimensioned" Concepts. *J. Ed. Psychol.* 64: 206-211; Apr. 1973.

Huber, William G. The Relationship of Anxiety to the Academic Performance of Institutionalized Retardates. *Am. J. Ment. Def.* 69: 462-466; Jan. 1965.

Hubley, Martin F. and Maciay, Charles W. An Experiment in High School Calculus. *Math. Teach.* 63: 609-612; Nov. 1970.

Hudgins, Bryce B. and Loftis, Lorraine. The Invisible Child in the Arithmetic Class: A Study of Teacher-Pupil Interaction. *J. Genet. Psychol.* 108: 143-152; Mar. 1966.

Hudgins, Bryce B. and Smith, Louis M. Group Structure and Productivity in Problem-Solving. *J. Ed. Psychol.* 57: 287-296; Oct. 1966.

Hungerman, Ann D. Achievement and Attitude of Sixth Grade Pupils in Conventional and Contemporary Mathematics Programs. *Arith. Teach.* 14: 30-39; Jan. 1967.

Ingersoll, Gary M. An Experimental Study of Two Methods of Presenting the Inversion Algorithm in Division of Fractions. *Calif. J. Ed. Res.* 22: 17-25; Jan. 1971.

Inskeep, James and Rowland, Monroe. An Analysis of School Subject Preferences of Elementary School Children of the Middle Grades: Another Look. *J. Ed. Res.* 58: 225-228; Jan. 1965.

Irish, Elizabeth H. Improving Problem Solving by Improving Verbal Generalization. *Arith. Teach.* 11: 169-175; Mar. 1964.

Ivanoff, John M.; DeWane, Evermode T.; and Praem, O. Use of Discriminant Analysis for Selecting Students for Ninth-Grade Algebra or General Mathematics. *Math. Teach.* 58: 412-416; May 1965.

Ivey, John O. Computation Skills: Results of Acceleration. *Arith. Teach.* 12: 39-42; Jan. 1965.

Jackson, Joseph. Analysis of a Team Teaching and of a Self-Contained Homeroom Experiment in Grades Five and Six. *J. Exp. Ed.* 32: 317-331; June 1964.

Jacobs, James N.; Berry, Althea; and Leinwohl, Judith. Evaluation of an Accelerated Arithmetic Program. *Arith. Teach.* 12: 113-119; Feb. 1965.

Jacobs, Paul I. and Vandeventer, Mary. The Learning and Transfer of Double-Classification Skills: A Replication and Extension. *J. Exp. Child Psychol.* 12: 240-257; Oct. 1971.

Jamison, King W. An Experiment with a Variable Base Abacus. *Arith. Teach.* 11: 81-84; Feb. 1964.

Jarvis, Oscar. An Analysis of Individual Differences in Arithmetic. *Arith. Teach.* 11: 471-473; Nov. 1964.

Jarvis, Oscar T. Boy-Girl Ability Differences in Elementary School Arithmetic. *Sch. Sci. Math.* 64: 657-659; Nov. 1964.

Jarvis, Oscar T. Arithmetic and Science Time Allotment Practices in Intermediate Grades. *Sch. Sci. Math.* 66: 322-324; Apr. 1966.

Jeffery, Jay M. Psychological Set in Relation to the Construction of Mathematics Tests. *Math. Teach.* 62: 636-638; Dec. 1969.

Jerman, Max. Some Strategies for Solving Simple Multiplication Combinations. *J. Res. Math. Ed.* 1: 95-128; Mar. 1970.

Jerman, Max. Individualized Instruction in Problem Solving in Elementary School Mathematics. *J. Res. Math. Ed.* 4: 6-19; Jan. 1973.

Johnson, Mauritz and Scriven, Eldon. Class Size and Achievement Gains in Seventh- and Eighth-Grade English and Mathematics. *Sch. R.* 75: 300-310; Sept. 1967.

Johnson, Richard T. and Anderson, Robert A. Arithmetic Achievement in England and Central Minnesota. *Arith. Teach.* 11: 176-180; Mar. 1964.

Johnston, James O.; Maertens, Norbert W.; and Schooley, Daniel E. When to Correct Arithmetic Problems - A Critical Variable. *Sch. Sci. Math.* 69: 799-805; Dec. 1969.

Jones, Thomas. The Effect of Modified Programmed Lectures and Mathematical Games Upon Achievement and Attitude of Ninth-Grade Low Achievers in Mathematics. Math. Teach. 61: 603-607; Oct. 1968.

Jones, W. Paul and DeBlassie, Richard R. Social Class Contrasts in Short Term Predictability of Grade 7 Achievement. J. Ed. Res. 65: 11-14; Sept. 1971.

Jordy, James L. A Comparative Study of Methods of Teaching Plane Geometry. Math. Teach. 57: 472-478; Nov. 1964.

Jose, Jean and Cody, John J. Teacher-Pupil Interaction as it Relates to Attempted Changes in Teacher Expectancy of Academic Ability and Achievement. Am. Ed. Res. J. 8: 39-49; Jan. 1971.

Josephina, (Sister). A Study of Spatial Abilities of Preschool Children. Arith. Teach. 11: 557-560; Dec. 1964.

Josephina, (Sister). Quantitative Thinking of Preschool Children. Arith. Teach. 12: 54-55; Jan. 1965.

Joyce, Bruce and Joyce, Elizabeth. Studying Issues in Mathematics Instruction. Arith. Teach. 11: 303-307; May 1964.

Kaess, Dale W. Form Constancy and the Perceptual Task: A Developmental Study. J. Exp. Psychol. 83: 465-471; Mar. 1970.

Kaplan, Jerome D. An Example of a Mathematics Instructional Program for Disadvantaged Children. Ed. Tech. 9: 40-43; Aug. 1969.

Kaplan, Jerome D. An Example of a Mathematics Instructional Program for Disadvantaged Children. Arith. Teach. 17: 332-334; Apr. 1970.

Karplus, Elizabeth F. and Karplus, Robert. Intellectual Development Beyond Elementary School: I. Deductive Logic. Sch. Sci. Math. 70: 398-406; May 1970.

Karplus, Robert and Karplus, Elizabeth F. Intellectual Development Beyond Elementary School. III - Ratio: A Longitudinal Study. Sch. Sci. Math. 72: 735-742; Nov. 1972.

Karplus, Robert and Peterson, Rita W. Intellectual Development Beyond Elementary School. II: Ratio, A Survey. Sch. Sci. Math. 70: 813-820; Dec. 1970.

Katz, Martin and Norris, Lila. The Contribution of Academic Interest Measures to the Differential Prediction of Marks. *J. Ed. Meas.* 9: 1-11; Spring 1972.

Kauffman, James M.; Payne, James S. and Ensminger, E. Eugene. Quantitative Judgments of Culturally Advantaged and Disadvantaged Preschool Children. *Psychol. Reports* 28: 939-944; June 1971.

Kaufman, Alan S. and Kaufman, Nadeen L. Tests Built from Piaget's and Gessell's Tasks as Predictors of First-Grade Achievement. *Child Develop.* 43: 521-535; June 1972.

Keats, John B. and Hansen, Duncan N. Definitions and Examples as Feedback in a CAI Stimulus-Centered Mathematics Program. *J. Res. Math. Ed.* 3: 113-122; Mar. 1972.

Keislar, Evan R. and Stern, Carolyn. Differentiated Instruction in Problem Solving for Children of Different Mental Ability Levels. *J. Ed. Psychol.* 61: 445-450; Dec. 1970.

Kennedy, George; Eliot, John; and Krulee, Gilbert. Error Patterns in Problem Solving Formulations. *Psychol. in Sch.* 7: 93-99; Jan. 1970.

Kennedy, Wallace A. and Walsh, John. A Factor Analysis of Mathematical Giftedness. *Psychol. Reports* 17: 115-119; Aug. 1965.

King, F. J.; Roberts, Dennis; and Kropp, Russell P. Relationship Between Ability Measures and Achievement Under Four Methods of Teaching Elementary Set Concepts. *J. Ed. Psychol.* 60: 244-247; June 1969.

King, Irvin L. A Formative Development of an Elementary School Unit on Proof. *J. Res. Math. Ed.* 4: 57-63; Jan. 1973.

King, William L. A Nonarbitrary Behavioral Criterion for Conservation of Illusion-Distorted Length in Five-Year-Olds. *J. Exp. Child Psychol.* 11: 171-181; Apr. 1971.

Klausmeier, Herbert J. Gear Learning Activities to Achievement Level of Students. *Wisc. J. Ed.* 96: 28-29; Feb. 1964.

Klausmeier, Herbert. Improving Problem Solving. *Wisc. J. Ed.* 96: 15-16; Mar. 1964.

Klausmeier, Herbert J. Accelerating Bright Older Children. *Wisc. J. Ed.* 96: 19-20, 27; May 1964.

Klausmeier, Herbert J. and Wiersma, William. Effects of Condensing Content in Mathematics and Science in the Junior High School. Sch. Sci. Math. 64: 4-11; Jan. 1964.

Klein, Alice E. Adopting a Textbook, or: Research Can Help! Sch. Sci. Math. 73: 743-746; Dec. 1973.

Klein, Paul A. Study 1-1: An Exploration of Selected Relationships Among the Enactive, Iconic, and Symbolic Modes of Representation. J. Res. Math. Ed. 4: 94-103; Mar. 1973.

Klein, Stephen P. and Niedermeyer, Fred C. Direction Sports: A Tutorial Program for Elementary-School Pupils. El. Sch. J. 72: 53-61; Nov. 1971.

Klinkerman, Ginger and Bridges, Faith. Team Teaching in Geometry. Math. Teach. 60: 488-492; May 1967.

Koch, Elmer A., Jr. Homework in Arithmetic. Arith. Teach. 12: 9-13; Jan. 1965.

Kolb, John R. Effects of Relating Mathematics to Science Instruction on the Acquisition of Quantitative Science Behaviors. J. Res. in Sci. Tchg. 5: 174-182; June 1967.

Koppitz, Elizabeth Munsterberg. The Visual Aural Digit Span Test with Elementary School Children. J. Clin. Psychol. 26: 349-353; July 1970.

Kratzer, Richard O. and Willoughby, Stephen S. A Comparison of Initially Teaching Division Employing the Distributive and Greenwood Algorithms with the Aid of a Manipulative Material. J. Res. Math. Ed. 4: 197-204; Nov. 1973.

Krich, Percy. Grade Placement and Meaningful Learning. Sch. Sci. Math. 64: 131-137; Feb. 1964.

Krich, Percy. Meaningful vs. Mechanical Method, Teaching Division of Fractions by Fractions. Sch. Sci. Math. 64: 697-708; Nov. 1964.

Kuhn, Deanna. Mechanisms of Change in the Development of Cognitive Structures. Child Develop. 43: 833-844; Sept. 1972.

Kulm, Gerald. Sources of Reading Difficulty in Elementary Algebra Textbooks. Math. Teach. 66: 649-652; Nov. 1973.

Kurtz, Ray. Fourth-Grade Division: How Much is Retained in Grade Five. Arith. Teach. 20: 65-71; Jan. 1973.

Kurtz, Rona. The Relationship of Years of School Attendance to the Development of Conservation of Matter. *Grad. Res. in Ed. & Related Disciplines* 2: 49-62; Apr. 1966.

Kyte, George C. and Fornwalt, James E. A Comparison of Superior Children with Normal Children in the Rate Mastery of the Multiplication of Fractions. *J. Ed. Res.* 60: 346-350; Apr. 1967.

Lach, Ivan John. Report of a Study on the Use of Programed Workbooks to Provide for Partially Individualized Mathematics Instruction in the Junior High. *Math. Teach.* 63: 512-515; Oct. 1970.

Lackner, Lois M. A Pilot Study on Teaching the Derivative Concept in Beginning Calculus by Inductive and Deductive Approaches. *Sch. Sci. Math.* 71: 563-567; June 1971.

Lackner, L. M. Teaching of Limit and Derivative Concepts in Beginning Calculus by Combinations of Inductive and Deductive Methods. *J. Exp. Ed.* 40: 51-56; Spring 1972.

Larsen, Gary Y. and Flavell, John H. Verbal Factors in Compensation Performance and the Relation Between Conservation and Compensation. *Child Develop.* 41: 965-977; Dec. 1970.

Leake, Lowell, Jr. The Status of Three Concepts of Probability in Children of Seventh, Eighth and Ninth Grades. *J. Exp. Ed.* 34: 78-81; Fall 1965.

Lee, Seong-Soo. The Effects of Visually Represented Cues on Learning of Linear Function Rules. *J. Exp. Child Psychol.* 12: 129-145; Aug. 1971.

Lehew, Charmon. The Performance of Four- and Five-Year-Old Children in Operation Head Start on Selected Arithmetic Abilities. *Arith. Teach.* 15: 53-59; Jan. 1968.

Leibowitz, Sarah L. Fryer. The Motivational Effect of Value Symbols and Competition Upon Problem-Solving Behavior in Children. *J. Genet. Psychol.* 108: 327-332; June 1966.

Lenke, Joanne M.; Bligh, Harold F.; and Kane, Bernard H. Cross-Validation of the Orleans-Hanna Algebra Prognosis Test and the Orleans-Hanna Geometry Prognosis Test. *Ed. & Psychol. Meas.* 31: 521-523; Summer 1971.

Lerch, Harold H. and Hamilton, Helen. A Comparison of a Structured-Equation Approach to Problem Solving with a Traditional Approach. *Sch. Sci. Math.* 66: 241-246; Mar. 1966.

Lerch, Harold H. and Kelly, Francis J. A Mathematics Program for Slow Learners at the Junior High Level. *Arith. Teach.* 13: 232-236; Mar. 1966.

Lerch, Harold H. and Mangrum, Charles T., II. Instructional Aids Suggested by Textbook Series. *Arith. Teach.* 12: 543-546; Nov. 1965.

Lessing, Elise E.; Zagorin, Susan W.; and Nelson, Dorothy. WISC Subtest and IQ Score Correlates of Father Absence. *J. Genet. Psychol.* 117: 181-195; Dec. 1970.

Lester, Barry M. and Klein, Robert E. The Effect of Stimulus Familiarity on the Conservation Performance of Rural Guatemalan Children. *J. Soc. Psychol.* 90: 197-205; Aug. 1973.

Levine, George. Attitudes of Elementary School Pupils and Their Parents Toward Mathematics and Other Subjects of Instruction. *J. Res. Math. Ed.* 3: 51-58; Jan. 1972.

Lewis, Bill. Underachievers Measure Up. *Am. Ed.* 5: 27-28; Feb. 1969.

Lewis, Marian. Teaching Arithmetic Computation Skills. *Ed. Vis. Handicapped* 2: 66-72; Oct. 1970.

Lewis, Michael. Probability Learning in Young Children: The Binary Choice Paradigm. *J. Genet. Psychol.* 108: 43-48; Mar. 1966.

Lewy, Arieh. Opportunity to Learn and Achievement in Three Subject Matter Areas. *J. Exp. Ed.* 41: 68-73; Fall 1972.

Lindgren, Henry Clay; Silva, Ina; Faraco, Italia; and DaRocha, Nadir S. Attitudes Toward Problem Solving as a Function of Success in Arithmetic in Brazilian Elementary Schools. *J. Ed. Res.* 58: 44-45; Sept. 1964.

Linn, Robert L. A Note on the Stability of the Iowa Tests of Basic Skills. *J. Ed. Meas.* 6: 29-30; Spring 1969.

Little, Audrey. A Longitudinal Study of Cognitive Development in Young Children. *Child Develop.* 43: 1024-1034; Sept. 1972.

Lloyd, Barbara B. Studies of Conservation with Yoruba Children of Differing Ages and Experience. *Child Develop.* 42: 415-428; June 1971.

Long, Barbara H. and Henderson, E. H. Originality, Reading, and Arithmetic. *Percep. & Motor Skills* 21: 553-554; 1965.

Long, Thomas E. and Herr, Edwin L. Teacher Perceptions of Basic Mathematics Skill Needs in Secondary Vocational Education. Math. Teach. 66: 61-66; Jan. 1973.

Lorsung, Sister Mary Beata. A Summary and Comparative Analysis of Eight of the Improved Mathematics Programs. Catholic Ed. R. 65: 343; May 1967.

Loughlin, Leo J.; O'Connor, Henry A.; Powell, Marvin; and Parsley, Kenneth M., Jr. An Investigation of Sex Differences by Intelligence, Subject-Matter Area, Grade, and Achievement Level on Three Anxiety Scales. J. Genet. Psychol. 106: 207-215; June 1965.

Lucas, James S. A Two Year Study Comparing the Achievement Effect of Eighth Grade Programmed Algebra Instruction to Conventional Textbook Algebra I Instruction. Calif. J. Ed. Res. 18: 179-183; Sept. 1967.

Lucow, William H. An Experiment with the Cuisenaire Method in Grade Three. Am. Ed. Res. J. 1: 159-167; May 1964.

Lumsden, Ernest A. and Kling. J. Kenneth. The Relevance of an Adequate Concept of "Bigger" for Investigations of Size Conservation: A Methodological Critique. J. Exp. Child Psychol. 8: 82-91; Aug. 1969.

Lyda, Wesley J. and Church, Ruby Summers. Direct, Practical Arithmetical Experiences and Success in Solving Realistic Verbal "Reasoning" Problems in Arithmetic. J. Ed. Res. 57: 530-533; July/Aug. 1964.

Lyda, W. J. and Duncan, Frances M. Quantitative Vocabulary and Problem Solving. Arith. Teach. 14: 289-291; Apr. 1967.

Lyda, W. J. and Robinson, Verna A. Quantitative Concepts in Selected Social Studies Textbooks for Second Grade. El. Sch. J. 65: 159-162; Dec. 1964.

Lyda, W. J. and Taylor, Margaret D. Facilitating an Understanding of the Decimal Numeration System Through Modular Arithmetic. Arith. Teach. 11: 101-103; Feb. 1964.

MacArthur, R. S. and Mosychuk, H. Lower and Upper Socioeconomic Group Contrasts in Long-Term Predictability of Grade Nine Achievement. J. Ed. Meas. 3: 167-168; Summer 1966.

MacKay, C. K.; Fraser, Joan; and Ross, Isabel. Matrices, Three by Three: Classification and Seriation. Child Develop. 41: 787-797; Sept. 1970.

Madden, J. Vincent. An Experimental Study of Student Achievement in General Mathematics in Relation to Class Size. Sch. Sci. Math. 68: 619-622; Oct. 1968.

Maertens, Norbert. Effects of Arithmetic Homework Upon the Attitudes of Third Grade Pupils Toward Certain School-Related Structures. Sch. Sci. Math. 68: 657-662; Oct. 1968.

Maertens, Norbert. An Analysis of the Effects of Arithmetic Homework Upon the Arithmetic Achievement of Third-Grade Pupils. Arith. Teach. 16: 383-389; May 1969.

Maertens, Norbert and Johnston, James. Effects of Arithmetic Homework Upon the Attitudes and Achievement of Fourth, Fifth and Sixth Grade Pupils. Sch. Sci. Math. 72: 117-126; Feb. 1972.

Mann, Lester; Taylor, Raymond G., Jr.; Proger, Barton B.; Dungan, Roy H.; and Tidey, William J. The Effect of Serial Retesting on the Relative Performance of High- and Low-Test Anxious Seventh Grade Students. J. Ed. Meas. 7: 97-104; Summer 1970.

Marjoribanks, Kevin. Environmental Correlates of Diverse Mental Abilities. J. Exp. Ed. 39: 64-68; Summer 1971.

Marksberry, Mary Lee; McCarter, Mayme; and Noyce, Ruth. Relation Between Cognitive Objectives from Selected Texts and from Recommendations of National Committees. J. Ed. Res. 62: 422-429; May/June 1969.

Marshall, Helen R. Transposition in Children as a Function of Age and Knowledge. J. Genet. Psychol. 108: 65-69; Mar. 1966.

McManis, Donald L. Conservation of Identity and Equivalence of Quantity by Retardates. J. Genet. Psychol. 115: 63-69; Sept. 1969.

McManis, Donald L. Comparison of Gross, Intensive, and Extensive Quantities by Retardates. J. Genet. Psychol. 115: 229-236; Dec. 1969.

McManis, Donald L. Conservation, Seriation, and Transitivity Performance by Retarded and Average Individuals. Am. J. Ment. Def. 74: 784-791: May 1970.

McNeil, John D. Prompting Versus Intermittent Confirmation in the Learning of a Mathematical Task. Arith. Teach. 12: 533-536; Nov. 1965.

Meadowcroft, Bruce A. Comparison of Two Methods of Using Programmed Learning. *Arith. Teach.* 12: 422-425; Oct. 1965.

Meadowcroft, Bruce A. The Effects on Conventionally Taught Eighth-Grade Math Following Seventh-Grade Programmed Math. *Arith. Teach.* 12: 614-616; Dec. 1965.

Meconi, L. J. Concept Learning and Retention in Mathematics. *J. Exp. Ed.* 36: 51-57; Fall 1967.

Meeker, Mary and Meyers, C. E. Memory Factors and School Success of Average and Special Groups of Ninth-Grade Boys. *Genet. Psychol. Monog.* 83: 275-308; May 1971.

Melnick, Gerald I. A Mechanism for Transition of Concrete to Abstract Cognitive Processes. *Child Develop.* 44: 599-605; Sept. 1973.

Mendels, Glen E. and Flanders, James P. Teachers' Expectations and Pupil Performance. *Am. Ed. Res. J.* 10: 203-212; Summer 1973.

Merenda, P. F. and Jackson, R. M. Relationship Between Fourth-Grade and Seventh-Grade Performance on the Iowa Tests of Basic Skills. *J. Ed. Meas.* 5: 163-165; 1968.

Merz, William R. and Rutherford, Brent M. Differential Teacher Regard for Creative Students and Achieving Students. *Calif. J. Ed. Res.* 23: 83-90; Mar. 1972.

Messer, Stanley B. The Relation of Internal-External Control to Academic Performance. *Child Develop.* 43: 1456-1462; Dec. 1972.

Meyen, Edward L. and Hieronymus, Albert N. The Age Placement of Academic Skills in Curriculum for the EMR. *Excep. Child.* 36: 333-339; Jan. 1970.

Milgram, Joel. Time Utilization in Arithmetic Teaching. *Arith. Teach.* 16: 213-215; Mar. 1969.

Miller, G. H. Geometry in the Elementary Grades: A Comparative Study of Greek Mathematics Education. *Arith. Teach.* 11: 85-88; Feb. 1964.

Miller, G. H. Geometry in the Secondary Schools of Greece: A Comparative Study. *Sch. Sci. Math.* 66: 817-822; Dec. 1966.

Miller, Herbert R. Sequencing and Prior Information in Linear Programed Instruction. *AV Comm. R.* 17: 63-76; Spring 1969.

Miller, Jack W. An Experimental Comparison of Two Approaches to Teaching Multiplication of Fractions. J. Ed. Res. 57: 468-471; May/June 1964.

Miller, Jack W.; Boismier, James D.; and Hooks, Janice. Training in Spatial Conceptualization: Teacher Directed Activity, Automated and Combination Programs. J. Exp. Ed. 38: 87-92; Fall 1969.

Miller, Patricia H. Attention to Stimulus Dimensions in the Conservation of Liquid Quantity. Child Develop. 44: 129-136; Mar. 1973.

Miller, Scott A. Contradiction, Surprise, and Cognitive Change: The Effects of Disconfirmation of Belief on Conservers and Nonconservers. J. Exp. Child Psychol. 15: 47-62; Feb. 1973.

Miller, William A. A Unit in Sentential Logic for Junior High School Students; Involving Both Valid and Invalid Inference Patterns. Sch. Sci. Math. 69: 548-552; June 1969.

Millman, Jason and Johnson, Mauritz, Jr. Relation of Section Variance to Achievement Gaines in English and Mathematics in Grades 7 and 8. Am. Ed. Res. J. 1: 47-51; Jan. 1964.

Minde, K.; Lewin, D.; Weiss, Gabrielle; Lavigueur, H.; Douglas, Virginia; and Sykes, Elizabeth. The Hyperactive Child in Elementary School: A 5 Year, Controlled, Followup. Excep. Child. 38: 215-221; Nov. 1971.

Mogull, Robert G. and Rosengarten, William, Jr. Predicting Student Success in Elementary Algebra. Calif. J. Ed. Res. 23: 104-107; May 1972.

Montague, David O. Arithmetic Concepts of Kindergarten Children in Contrasting Socio-economic Areas. El. Sch. J. 64: 393-397; Apr. 1964.

Montgomery, Mary E. The Interaction of Three Levels of Aptitude Determined by a Teach-Test Procedure with Two Treatments Related to Area. J. Res. Math. Ed. 4: 271-278; Nov. 1973.

Moody, William B.; Abell, Roberta; and Bausell, R. Barker. The Effect of Activity-Oriented Instruction Upon Original Learning, Transfer, and Retention. J. Res. Math. Ed. 2: 207-212; May 1971.

Moody, William B.; Bausell, R. Barker; and Jenkins, Joseph R. The Effect of Class Size on the Learning of Mathematics: A Parametric Study with Fourth-Grade Students. *J. Res. Math. Ed.* 4: 170-176; May 1973.

Moore, William J. and Cain, Ralph W. The New Mathematics and Logical Reasoning and Creative Thinking Abilities. *Sch. Sci. Math.* 68: 731-733; Nov. 1968.

Morris, J. L.; Pestaner, Mariana; and Nelson, A. Mobility and Achievement. *J. Exp. Ed.* 35: 74-80; 1967.

Murray, Frank B. Conservation of Illusion-Distorted Lengths and Areas by Primary School Children. *J. Ed. Psychol.* 56: 62-66; Apr. 1965.

Murray, Frank B. Cognitive Conflict and Reversibility Training in the Acquisition of Length Conservation. *J. Ed. Psychol.* 59: 82-87; Apr. 1968.

Murray, Frank B. Conservation in Self and Object. *Psychol. Reports* 25: 941-942; Dec. 1969.

Murray, Frank B. Verbal and Nonverbal Assessment of the Conservation of Illusion-Distorted Length. *J. Res. Math. Ed.* 1: 9-18; Jan. 1970.

Murray, Frank B. Stimulus Mode and the Conservation of Weight and Number. *J. Ed. Psychol.* 61: 287-291; Aug. 1970.

Nadel, C. and Schoeppe, A. Conservation of Mass, Weight, and Volume as Evidenced by Adolescent Girls in Eighth Grade. *J. Genet. Psychol.* 122: 309-313; June 1973.

Namy, Elmer. Intellectual and Academic Characteristics of Fourth Grade Gifted and Pseudogifted Students. *Excep. Child.* 34: 15-18; Sept. 1967.

Nasca, Donald. Comparative Merits of a Manipulative Approach to Second-Grade Arithmetic. *Arith. Teach.* 13: 221-226; Mar. 1966.

Naylor, Frank D. and Gaudry, Eric. The Relationship of Adjustment, Anxiety, and Intelligence to Mathematics Performance. *J. Ed. Res.* 66: 413-417; May/June 1973.

Neale, Daniel C. and Proshek, John M. School-Related Attitudes of Culturally Disadvantaged Elementary School Children. *J. Ed. Psychol.* 58: 238-244; Aug. 1967.

Neale, Daniel C.; Gill, Noel; and Tismer, Werner. Relationship Between Attitudes Toward School Subjects and School Achievement. *J. Ed. Res.* 63: 232-237; Jan. 1970.

Neatrour, Charles R. A Status Survey of the Geometric Content in the Mathematics Curriculum of the Middle School. *Sch. Sci. Math.* 69: 610-614; Oct. 1969.

Neimark, Edith D. and Slotnick, Nan S. Development of the Understanding of Logical Connectives. *J. Ed. Psychol.* 61: 451-460; Dec. 1970.

Nelson, Katherine J.; Zelniker, Tamar; and Jeffrey, Wendell E. The Child's Concept of Proportionality: A Re-examination. *J. Exp. Child Psychol.* 8: 256-262; Oct. 1969.

Nelson, L. Doyal. Textbook Difficulty and Mathematics Achievement in Junior High-School. *Math. Teach.* 58: 724-729; Dec. 1965.

Newman, Thomas B. and Seiser, William. The Floating Teacher - Help for the Mathematically Disadvantaged. *Math. Teach.* 60. 753-755; Nov. 1967.

Nicodemus, Robert B. Order of Complexity in Attribute Blocks. *Sch. Sci. Math.* 70: 649-654; Oct. 1970.

Niedermeyer, F. C.; Brown, J.; and Sulzen, R. Learning and Varying Sequences of Ninth-Grade Mathematics Materials. *J. Exp. Ed.* 37: 61-66; 1969.

Noddings, Nellie L. Providing for Individual Rates of Learning in Mathematics. *Math. Teach.* 62: 543-545; Nov. 1969.

Nolan, J. Dennis and Pendarvis, Leah V. Effects of Variable-Irrelevant Dimensions on the Discrimination Reversal Learning of Nursery School Children. *J. Exp. Psychol.* 86: 428-433; Dec. 1970.

Nolen, Patricia A.; Kunzelmann, Harold P.; and Haring, Norris G. Behavioral Modification in a Junior High Learning Disabilities Classroom. *Excep. Child.* 34: 163-168; Nov. 1967.

Norris, Fletcher R. Student Mathematics Achievement as Related to Teacher In-Service Work. *Math. Teach.* 62: 321-327; Apr. 1969.

O'Brien, Thomas C. and Shapiro, Bernard J. The Development of Logical Thinking in Children. *Am. Ed. Res. J.* 5: 531-542; Nov. 1968.

O'Bryan, Kenneth G. and Boersma, Frederic J. Eye Movements, Perceptual Activity, and Conservation Development. *J. Exp. Child Psychol.* 12: 157-169; Oct. 1971.

O'Bryan, Kenneth G. and Boersma, Frederic J. Movie Presentation of Piagetian Tasks: A Procedure for the Assessment of Conservation Attainment. *J. Genet. Psychol.* 121: 295-302; Dec. 1972.

Ohuche, R. Ogbonna. Piaget and the Mende of Sierra Leone. *J. Exp. Ed.* 39: 75-77; Summer 1971.

Ojemann, Ralph H.; Maxey, E. James; and Snider, Bill C. F. The Effect of a Program of Guided Learning Experiences in Developing Probability Concepts at the Third Grade Level. *J. Exp. Ed.* 33: 321-330; June 1965.

Olander, Herbert T. and Ehmer, Charles L. What Pupils Know About Vocabulary in Mathematics - 1930 and 1968. *El. Sch. J.* 71: 361-367; Apr. 1971.

Olander, Herbert T. and Robertson, Howard C. The Effectiveness of Discovery and Expository Methods in the Teaching of Fourth-Grade Mathematics. *J. Res. Math. Ed.* 4: 33-44; Jan. 1973.

O'Reilly, Edmond and Steger, Joseph A. Children's Use of Context in Judgment of Weight. *Child Develop.* 41: 1095-1101; Dec. 1970.

Osborne, R. T. and Miele, Frank. Racial Differences in Environmental Influences on Numerical Ability as Determined by Heritability Estimates. *Percep. & Motor Skills* 28: 535-538; Apr. 1969.

Otto, Wayne. Inhibitory Potential in Good and Poor Achievers. *J. Ed. Psychol.* 56: 200-207; Aug. 1965.

Overbeck, Carla and Schwartz, Marian. Training in Conservation of Weight. *J. Exp. Child Psychol.* 9: 253-264; Apr. 1970.

Overholt, Elbert D. A Piagetian Conservation Concept. *Arith. Teach.* 12: 317-326; May 1965.

Owens, Douglas T. and Steffe, Leslie P. Performance of Kindergarten Children on Transitivity of Three Matching Relations. *J. Res. Math. Ed.* 3: 141-154; May 1972.

Pace, Angela. Understanding of Basic Concepts of Arithmetic: A Comparative Study. *J. Ed. Res.* 60: 107-120; Nov. 1966.

Pace, Angela. The Effect of Instruction Upon the Development of the Concept of Number. *J. Ed. Res.* 62: 183-189; Dec. 1968.

Page, H. W. Concepts of Length and Distance in a Study of Zulu Youths. *J. Soc. Psychol.* 90: 9-16; June 1973.

Paige, Donald D. Learning While Testing. *J. Ed. Res.* 59: 276-277; Feb. 1966.

Paige, Donald D. A Comparison of Team Versus Traditional Teaching of Junior High School Mathematics. *Sch. Sci. Math.* 67: 365-367; Apr. 1967.

Paige, Donald D. and Jennings, Margaret. Measurement in the Elementary School. *Arith. Teach.* 14: 354-357; May 1967.

Papalia, Diane E. and Hooper, Frank H. A Developmental Comparison of Identity and Equivalence Conservations. *J. Exp. Child Psychol.* 12: 347-361; Dec. 1971.

Paquette, Gerard A. Study 1-3: An In-Depth Exploration of the Role of Iconic Representations in the Study of Congruence of Triangles. *J. Res. Math. Ed.* 4: 105-110; Mar. 1973.

Paris, Scott G. Comprehension of Language Connectives and Propositional Logical Relationships. *J. Exp. Child Psychol.* 16: 278-291; Oct. 1973.

Parker, Ronald K.; Rieff, Margery L.; and Sperr, Shelby J. Teaching Multiple Classification to Young Children. *Child Develop.* 42: 1779-1789; Dec. 1971.

Parque, Richard A. An Experimental Study to Investigate the Mathematical Needs of Students in a Traditional Physics Course. *Sch. Sci. Math.* 66: 405-408; May 1966.

Paschal, Billy J. A Concerned Teacher Makes the Difference. *Arith. Teach.* 13: 203-205; Mar. 1966.

Passy, Robert A. Socio-Economic Status and Mathematics Achievement. *Arith. Teach.* 11: 469-470; Nov. 1964.

Pate, Robert Thomas. Transactional Pattern Differences Between School Mathematics Programs. *Arith. Teach.* 13: 21-25; Jan. 1966.

Pattison, Sylvia J. and Fielder, W. R. Social Class and Number Concepts Among Young Children. *Calif. J. Ed. Res.* 20: 75-84; Mar. 1969.

Payne, Holland. What About Modern Programs in Mathematics? *Math. Teach.* 58: 422-424; May 1965.

Peisach, Estelle and Wein, Norman. Relationship of Conservation Explanations to Item Difficulty. J. Genet. Psychol. 117: 167-180; Dec. 1970.

Pella, Milton B. Some Observations Concerning Science and Mathematics Instruction in Three Countries of the Middle East. Sch. Sci. Math. 65: 729-737; Nov. 1965.

Peper, John B. and Chansky, Norman M. Esteem and Achievement in Arithmetic. El. Sch. J. 70: 284-288; Feb. 1970.

Perrodin, Alex F. and Snipes, Walter T. The Relationship of Mobility to Achievement in Reading, Arithmetic, and Language in Selected Georgia Elementary Schools. J. Ed. Res. 59: 315-319; Mar. 1966.

Peters, Donald L. Discovery Learning in Kindergarten Mathematics. J. Res. Math. Ed. 1: 76-87; Mar. 1970.

Peters, Donald L. Verbal Mediators and Cue Discrimination in the Transition from Nonconservation to Conservation of Number. Child Develop. 41: 707-721; Sept. 1970.

Peterson, John C.; Thomas, H. Laverne; Lovett, C. J.; and Bright, George W. The Effect of Organizers and Knowledge of Behavioral Objectives on Learning a Mathematical Concept. J. Res. Math. Ed. 4: 76-84; Mar. 1973.

Phillips, E. Ray and Kane, Robert B. Validating Learning Hierarchies for Sequencing Mathematical Tasks in Elementary School Mathematics. J. Res. Math. Ed. 4: 141-151; May 1973.

Phillips, Robert B., Jr. Teacher Attitude as Related to Student Attitude and Achievement in Elementary School Mathematics. Sch. Sci. Math. 73: 501-507; June 1973.

Pick, Herbert L., Jr. and Pick, Anne D. A Developmental and Analytic Study of the Size-Weight Illusion. J. Exp. Child Psychol. 5: 362-371; Sept. 1967.

Pigge, Fred L. Analysis of Covariance in a Randomly Replicated Arithmetic Methods Experiment. J. Exp. Ed. 34: 73-83; Summer 1966.

Pigge, Fred L. Frequencies of Unwritten Algorisms. Arith. Teach. 14: 588-593; Nov. 1967.

Pitts, Vera L. An Investigation of the Relationships Between Two Preschool Programs on the Adjustment and Readiness of Disadvantaged Pupils. Childhd. Ed. 44: 524-525; Apr. 1968.

Plant, Walter T. and Southern, Mara L. The Intellectual and Achievement Effects of Preschool Cognitive Stimulation of Poverty Mexican-American Children. *Genet. Psychol. Monog.* 86: 141-173; Aug. 1972.

Posamentier, Alfred. The Effect of Reading Ability on Performance on the Orleans Geometry Prognosis Test. *Grad. Res. in Ed. & Related Disciplines* 2: 184; Nov. 1966.

Postlethwaite, T. N. International Association for the Evaluation of Educational Achievement (IEA) - The Mathematics Study. *J. Res. Math. Ed.* 2: 69-103; Mar. 1971.

Potter, Mary C. and Levy, Ellen I. Spatial Enumeration Without Counting. *Child Develop.* 39: 265-272; Mar. 1968.

Powell, Marvin; O'Connor, Henry A.; and Parsley, Kenneth M., Jr. Further Investigation of Sex Differences in Achievement of Under-, Average-, and Over-Achieving Students Within Five IQ Groups in Grades Four Through Eight. *J. Ed. Res.* 57: 268-270; Jan. 1964.

Pratoomraj, Sawat and Johnson, Ronald C. Kinds of Questions and Types of Conservation Tasks as Related to Children's Conservation Responses. *Child Develop.* 37: 343-353; June 1966.

Price, Edette B.; Prescott, Arthur L.; and Hopkins, Kenneth D. Comparative Achievement with Departmentalized and Self-Contained Classroom Organization. *Arith. Teach.* 14: 212-215; Mar. 1967.

Price, Eleanor and Rosemeier, Robert. Some Cognitive and Affective Outcomes of Same-Sex Versus Coeducational Grouping in First Grade. *J. Exp. Ed.* 40: 70-77; Summer 1972.

Price, Jack. Discovery: Its Effects on Critical Thinking and Achievement in Mathematics. *Math. Teach.* 60: 874-876; Dec. 1967.

Proger, Barton B.; Mann, Lester; Taylor, Raymond G., Jr.; and Morrell, James E. Test Anxiety and Defensiveness Experimentally Induced by Four Conditions of Testing Arousal. *J. Exp. Ed.* 39: 78-83; Summer 1971.

Prouse, Howard L. Creativity in School Mathematics. *Math. Teach.* 60: 876-879; Dec. 1967.

Pufall, Peter B.; Shaw, Robert E.; and Syrdal-Lasky, Ann. Development of Number Conservation: An Examination of Some Predictions from Piaget's Stage Analysis and Equilibration Model. *Child Develop.* 44: 21-27; Mar. 1973.

Pyatte, Jeff A. Some Effects of Unit Structure on Achievement and Transfer. *Am. Ed. Res. J.* 6: 241-261; Mar. 1969.

Rainey, Dan S. and Kelley, Francis J. An Evaluation of a Programmed Textbook with Educable Mentally Retarded Children. *Excep. Child.* 34: 125-126; Oct. 1967.

Ramayya, D. P. Achievement Skills, Personality Variables, and Classroom Climate in Graded and Nongraded Elementary Schools. *Psychol. in Sch.* 9: 88-92; Jan. 1972.

Randolph, Paul H. An Experiment in Programmed Instruction in Junior High School. *Math. Teach.* 57: 160-162; Mar. 1964.

Raven, Ronald J. The Development of Classification Abilities in Culturally Disadvantaged Children. *J. Res. in Sci. Tchg.* 5: 224-229; 1967-68.

Rea, Robert E. and French, James. Payoff in Increased Instructional Time and Enrichment Activities. *Arith. Teach.* 19: 663-668; Dec. 1972.

Rea, Robert E. and Reys, Robert E. Mathematical Competencies of Entering Kindergarteners. *Arith. Teach.* 17: 65-74; Jan. 1970.

Rea, Robert E. and Reys, Robert E. The Comprehensive Mathematics Inventory: An Experimental Instrument for Assessing Youngsters Entering School. *J. Ed. Meas.* 7: 45-47; Spring 1970.

Rea, Robert E. and Reys, Robert E. Competencies of Entering Kindergarteners in Geometry, Number, Money, and Measurement. *Sch. Sci. Math.* 71: 389-402; May 1971.

Rea, Robert E. and Reys, Robert E. Mathematical Competencies of Negro and Non-Negro Children Entering School. *J. Negro Ed.* 40: 12-16; Winter 1971.

Redbird, Helen. Individualizing Arithmetic Instruction. *Arith. Teach.* 11: 348-349; May 1964.

Renzulli, Joseph S. and Shaw, Robert A. The Reliability and Validity of the Contemporary Mathematics Test. *Ed. & Psychol. Meas.* 31: 973-976; Winter 1971.

Retzer, Kenneth A. and Henderson, Kenneth B. Effect of Teaching Concepts of Logic on Verbalization of Discovered Mathematical Generalizations. *Math. Teach.* 40: 707-710; Nov. 1967.

Reys, Robert E.; Kerr, R. D.; and Alspaugh, John W. Mathematics Curriculum Change in Missouri Secondary Schools. Sch. & Com. 56: 6-7, 9; Dec. 1969.

Reys, Robert E. and Knowles, Lois. What is the Status of Elementary School Mathematics? El. Sch. J. 68: 167-171; Jan. 1968.

Reys, Robert E. and Rea, Robert E. The Comprehensive Mathematics Inventory: An Experimental Instrument for Assessing the Mathematical Competencies of Children Entering School. J. Res. Math. Ed. 1: 180-186; May 1970.

Rhodes, Fen. Team Teaching Compared with Traditional Instruction in Grades Kindergarten Through Six. J. Ed. Psychol. 62: 110-116; Apr. 1971.

Riedesel, C. Alan. Verbal Problem Solving: Suggestions for Improving Instruction. Arith. Teach. 11: 312-316; May 1964.

Rimoldi, H. J. A.; Aghi, M.; and Burder, G. Some Effects of Logical Structure, Language, and Age in Problem Solving in Children. J. Genet. Psychol. 112: 127-143; Mar. 1968.

Roberge, James J. Negation in the Major Premise as a Factor in Children's Deductive Reasoning. Sch. Sci. Math. 69: 715-722; Nov. 1969.

Roberge, James J. A Study of Children's Abilities to Reason with Basic Principles of Deductive Reasoning. Am. Ed. Res. J. 7: 583-596; Nov. 1970.

Roberts, Dorothy M. and Bloom, Irving. Mathematics in Kindergarten - Formal or Informal? El. Sch. J. 67: 338-341; Mar. 1967.

Roberts, Fannie M. Attitudes Toward Mathematics of Faculty and Students in Three High Schools. Sch. Sci. Math. 70: 785-793; Dec. 1970.

Roberts, Gerhard H. The Failure Strategies of Third Grade Arithmetic Pupils. Arith. Teach. 15: 442-446; May 1968.

Robinson, Halbert B. An Experimental Examination of the Size-Weight Illusion in Young Children. Child Develop. 35: 91-107; Mar. 1964.

Roll, Samuel. Reversibility Training and Stimulus Desirability as Factors in Conservation of Number. Child Develop. 41: 501-507; June 1970.

Romberg, Thomas A. A Note on Multiplying Fractions. *Arith. Teach.* 15: 263-265; Mar. 1968.

Romberg, Thomas A. and Gilbert, Lynn E. The Effect of Training on Length on the Performance of Kindergarten Children on Nonstandard But Related Tasks. *J. Res. Math. Ed.* 3: 69-75; Mar. 1972.

Romberg, Thomas A. and Shepler, Jack. Retention of Probability Concepts: A Pilot Study Into the Effects of Mastery Learning with Sixth-Grade Students. *J. Res. Math. Ed.* 4: 26-32; Jan. 1973.

Romberg, Thomas A. and Wilson, James W. The Development of Mathematics Achievement Tests for the National Longitudinal Study of Mathematical Abilities. *Math. Teach.* 61: 489-495; May 1968.

Romberg, Thomas A. and Wilson, James W. The Effect of an Advance Organizer, Cognitive Set, and Post Organizer on the Learning and Retention of Written Materials. *J. Res. Math. Ed.* 4: 68-76; Mar. 1973.

Rosenfeld, Michael and Hilton, Thomas L. Negro-White Differences in Adolescent Educational Growth. *Am. Ed. Res. J.* 8: 267-283; Mar. 1971.

Rosner, Jerome. Language Arts and Arithmetic Achievement, and Specifically Related Perceptual Skills. *Am. Ed. Res. J.* 10: 59-68; Winter 1973.

Ross, Dorothea. Incidental Learning of Number Concepts in Small Group Games. *Am. J. Ment. Def.* 74: 718-725; May 1970.

Ross, Ramon. A Description of Twenty Arithmetic Underachievers. *Arith. Teach.* 11: 235-241; Apr. 1964.

Rothenberg, Barbara B. Conservation of Number Among Four- and Five-Year-Old Children: Some Methodological Considerations. *Child Develop.* 40: 383-406; June 1969.

Rothenberg, Barbara B. Preschool Children's Understanding of the Coordinated Concepts of Distance, Movement, Number, and Time. *J. Genet. Psychol.* 115: 263-276; Dec. 1969.

Rothenberg, Barbara B. and Orost, Jean H. The Training of Conservation of Number in Young Children. *Child Develop.* 40: 707-726; Sept. 1969.

Ruddell, Arden K. and Brown, Gerald W. In-Service Education in Arithmetic: Three Approaches. *El. Sch. J.* 64: 377-382; Apr. 1964.

Russell, Ivan L. Motivation for School Achievement: Measurement and Validation. J. Ed. Res. 62: 263-266; Feb. 1969.

Sabers, Darrell L. and Feldt, Leonard. An Empirical Study of the Effect of the Correction for Chance Success on the Reliability and Validity of an Aptitude Test. J. Ed. Meas. 5: 251-258; Fall 1968.

Sato, Ryoichiro. Commentary on the International Study of Achievement in Mathematics. Arith. Teach. 15: 103-107; Feb. 1968.

Sawada, Daiyo. Study 3-1: An Assessment of a Selected Set of Piagetian-Derived Operators for the Generation of Effective Learning Hierarchies. J. Res. Math. Ed. 4: 118-121; Mar. 1973.

Sawada, Daiyo and Nelson, L. Doyal. Conservation of Length and the Teaching of Linear Measurement: A Methodological Critique. Arith. Teach. 14: 345-348; May 1967.

Saxe, Richard W. What's a School For? El. Sch. J. 71: 7-11; Oct. 1971.

Scandura, Joseph M. An Analysis of Exposition and Discovery Modes of Problem Solving Instruction. J. Exp. Ed. 33: 148-159; Dec. 1964.

Scandura, Joseph M. Algorithm Learning and Problem Solving. J. Exp. Ed. 34: 1-6; Summer 1966.

Scandura, Joseph M. Problem Solving and Prior Learning. J. Exp. Ed. 34: 7-11; Summer 1966.

Scandura, Joseph M.; Barksdale, Joan; Durnin, John H.; and McGee, Robert. An Unexpected Relationship Between Failure and Subsequent Mathematics Learning. Psychol. in Sch. 6: 379-381; Oct. 1969.

Scandura, Joseph M. and Durnin, John H. Extra-Scope Transfer in Learning Mathematical Strategies. J. Ed. Psychol. 59: 350-354; Oct. 1968.

Scandura, Joseph M.; Woodward, Ernest; and Lee, Frank. Rule Generality and Consistency in Mathematics Learning. Am. Ed. Res. J. 4: 303-319; May 1967.

Schaeffer, Benson and Ellis, Stephen. The Effects of Overlearning on Children's Nonreversal and Reversal Learning Using Unrelated Stimuli. J. Exp. Child Psychol. 10: 1-7; Aug. 1970.

Schall, William E. Comparing Mental Arithmetic Modes of Presentation in Elementary School Mathematics. Sch. Sci. Math. 73: 359-366; May 1973.

Scharf, Eugenia S. The Use of the Semantic Differential in Measuring Attitudes of Elementary School Children Toward Mathematics. Sch. Sci. Math. 71: 641-649; Oct. 1971.

Schell, Leo M. Learning the Distributive Property by Third Graders. Sch. Sci. Math. 68: 28-32; Jan. 1968.

Schlinsog, George W. The Effects of Supplementing Sixth-Grade Instruction with a Study of Non-Decimal Numbers. Arith. Teach. 15: 254-263; Mar. 1968.

Schnall, Melvyn; Alter, Ellen; Swanlund, Terry; and Schweitzer, Thomas. A Sensory-Motor Context Affecting Performance in a Conservation Task: A Closer Analogue of Reversibility Than Empirical Return. Child Develop. 43: 1012-1023; Sept. 1972.

Schnur, James O. A Study of the Possible Improvement of Problem Solving Ability in Migrant Children. Sch. Sci. Math. 69: 821-826; Dec. 1969.

Schnur, James O. and Callahan, Leroy G. Knowledge of Certain Geometric Concepts Possessed by Students on Leaving Elementary School. Sch. Sci. Math. 73: 471-478; June 1973.

Schroeder, Lily Becker. A Study of the Relationships Between Five Descriptive Categories of Emotional Disturbance and Reading and Arithmetic Achievement. Excep. Child. 32: 111-112; Oct. 1965.

Schultz, Edward W. The Influence of Teacher Behavior and Dyad Compatibility on Clinical Gains in Arithmetic Tutoring. J. Res. Math. Ed. 3: 33-41; Jan. 1972.

Schwartz, Anthony N. Assessment of Mathematical Concepts of Five-Year-Old Children. J. Exp. Ed. 37: 67-74; Spring 1969.

Schwartz, Marilyn Miller and Scholnick, Ellin Kofsky. Scalogram Analysis of Logical and Perceptual Components of Conservation of Discontinuous Quantity. Child Develop. 41: 695-705; Sept. 1970.

Schwarz, Robert H. and Shores, Richard E. The Academic Achievement of EMR Students and Social Class. Am. J. Ment. Def. 74: 338-340; Nov. 1969.

Scott, C. H. and Rude, Terry. Plane Geometry by Vector Methods. *Sch. Sci. Math.* 70: 230-238; Mar. 1970.

Scott, Lloyd. Children's Perception of Mathematical Inconsistencies. *Arith. Teach.* 12: 617-624; Dec. 1965.

Scott, Lloyd. A Study of the Case for Measurement in Elementary School Mathematics. *Sch. Sci. Math.* 66: 714-722; Nov. 1966.

Scott, Lloyd F. Summer Loss in Modern and Traditional Elementary School Mathematics Programs. *Calif. J. Ed. Res.* 28: 145-151; May 1967.

Scott, Ralph. Home Start: Family-Centered Preschool Enrichment for Black and White Children. *Psychol. in Sch.* 10: 140-146; Apr. 1973.

Scott, Ralph and Lighthall, Frederick F. Relationship Between Content, Sex, Grade, and Degree of Disadvantage in Arithmetic Problem Solving. *J. Sch. Psychol.* 6: 61-67; Fall 1967.

Shah, Sair Ali. Selected Geometric Concepts Taught to Children Ages Seven to Eleven. *Arith. Teach.* 16: 119-128; Feb. 1969.

Shantz, Carolyn Uhlinger and Smock, Charles D. Development of Distance Conservation and the Spatial Coordinate System. *Child Develop.* 37: 943-948; 1966.

Shapiro, Bernard J. and O'Brien, Thomas C. Logical Thinking in Children Ages Six Through Thirteen. *Child Develop.* 41: 823-829; Sept. 1970.

Sharples, Aneita; Sutton-Smith, B.; Exner, J.; and Rosenberg, B. G. Logical Analysis and Transitivity. *J. Genet. Psychol.* 112: 21-25; Mar. 1968.

Shaver, James P. and White, Darrell K. Social Need and Learning in Algebra with Programed Instruction. *J. Exp. Ed.* 35: 94-96; Fall 1966.

Sheehan, T. Joseph. Patterns of Sex Differences in Learning Mathematical Problem-Solving. *J. Exp. Ed.* 36: 84-87; Summer 1968.

Shepler, Jack Lee. Parts of a Systems Approach to the Development of a Unit in Probability and Statistics for the Elementary School. *J. Res. Math. Ed.* 1: 197-205; Nov. 1970.

Sheppard, John L. Conservation of Part and Whole in the Acquisition of Class Inclusion. Child Develop. 44: 380-383; June 1973.

Shepps, Florence P. and Shepps, R. Ronald. Relationship of Study Habits and School Attitudes to Achievement in Mathematics and Reading. J. Ed. Res. 65: 71-73; Oct. 1971.

Sherman, Homer C. and Belding, Robert E. Are Soviet Arithmetic Books Better Than Ours? Arith. Teach. 12: 633-637; Dec. 1965.

Sherrill, James M. The Effects of Different Presentations of Mathematical Word Problems Upon the Achievement of Tenth Grade Students. Sch. Sci. Math. 73: 277-282; Apr. 1973.

Shim, Chung-Phing. A Study of the Cumulative Effect of Four Teacher Characteristics on the Achievement of Elementary School Pupils. J. Ed. Res. 59: 33-34; Sept. 1965.

Shulte, Albert P. The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics. Math. Teach. 63: 56-64; Jan. 1970.

Shumway, Richard J. Negative Instances and Mathematical Concept Formation: A Preliminary Study. J. Res. Math. Ed. 2: 218-227; May 1971.

Shuster, Albert and Pigge, Fred. Retention Efficiency of Meaningful Teaching. Arith. Teach. 12: 24-31; Jan. 1965.

Siegel, Alexander W. and McBurney, Donald H. Estimation of Line Length and Number: A Developmental Study. J. Exp. Child Psychol. 10: 170-180; Oct. 1970.

Silverblank, Francine. A Selection of Selected Personality Factors Between Students Talented in English and Students Talented in Mathematics. Calif. J. Ed. Res. 24: 61-65, Mar. 1973.

Silverman, Irwin and Schneider, Dale S. A Study of the Development of Conservation by a Nonverbal Method. J. Genet. Psychol. 122: 287-291; June 1968.

Silverstein, A. B.; Auger, Richard; and Krudis, Bruce R. The Meaning of Indefinite Number Terms for Mentally Retarded Children. Am. J. Ment. Def. 69: 419-425; Nov. 1964.

Singhal, Sushila and Crago, Priscilla H. Sex Differences in the School Gains of Migrant Children. J. Ed. Res. 64: 417-419; May/June 1971.

Sloan, Fred A., Jr. and Pate, Robert Thomas. Teacher-Pupil Interaction in Two Approaches to Mathematics. El. Sch. J. 67: 161-167; Dec. 1966.

Small, Dwain E.; Holtan, Boyd D.; and Davis, Edward J. A Study of Two Methods of Checking Homework in a High School Geometry Class. Math. Teach. 60: 149-152; Feb. 1967.

Smith, Frank. The Readability of Junior High School Mathematics Textbooks. Math. Teach. 62: 289-291; Apr. 1969.

Smith, Frank. The Readability of Sixth Grade Word Problems. Sch. Sci. Math. 71: 559-562; June 1971.

Smith, Ian D. The Effects of Training Procedures Upon the Acquisition of Conservation of Weight. Child Develop. 39: 515-526; June 1968.

Smith, Ian D. Impact of Computer-Assisted Instruction on Student Attitudes. J. Ed. Psychol. 64: 366-372; June 1973.

Smith, Kenneth J. and Heddens, James W. The Readability of Experimental Mathematics Materials. Arith. Teach. 11: 391-394; Oct. 1964.

Smith, Robert F. Diagnosis of Pupil Performance on Place-Value Tasks. Arith. Teach. 20: 403-408; May 1973.

Smith, Timothy A. and Shaw, Carl N. Structural Analysis as an Aid in Designing an Instructional System. J. Ed. Meas. 6: 137-143; Fall 1969.

Sneider, Sister Mary Joetta. Achievement and Programmed Learning. Math. Teach. 61: 162-164; Feb. 1968.

Snipes, Walter T. Mobility on Arithmetic Achievement. Arith. Teach. 13: 43-46; Jan. 1966.

Snow, Catherine E. and Rabinovitch, M. Sam. Conjunctive and Disjunctive Thinking in Children. J. Exp. Child Psychol. 7: 1-9; Feb. 1969.

Sowder, Larry. Performance on Some Discovery Tasks. Grades 4-7. J. Res. Math. Ed. 2: 5-11; Jan. 1971.

Spagnoli, Joseph. An Experience with Programmed Materials. J. Ed. Res. 58: 447-448; July/Aug. 1965.

Sparks, Billie Earl; Brown, Julia Ann; and Bassler, Otto C. The Feasibility of Inducing Number Conservation Through Training on Reversibility. J. Res. Math. Ed. 1: 134-143; May 1970.

Stafford, Don G. and Renner, John W. SCIS Helps the First Graders to Use Logic in Problem Solving. Sch. Sci. Math. 71: 159-164; Feb. 1971.

Stafford, Richard E. Hereditary and Environmental Components of Quantitative Reasoning. R. Ed. Res. 42: 183-201; Spring 1972.

Stauffer, R. G. A Vocabulary Study Comparing Reading, Arithmetic, Health and Science Texts. Read. Teach. 20: 141-147; 1966.

Steffe, Leslie P. The Relationship of Conservation of Numerousness to Problem-Solving Abilities of First-Grade Children. Arith. Teach. 15: 47-52; Jan. 1968.

Steffe, Leslie P. Differential Performance of First-Grade Children When Solving Arithmetic Addition Problems. J. Res. Math. Ed. 1: 144-161; May 1970.

Steffe, Leslie P. and Carey, Russell L. Equivalence and Order Relations as Interrelated by Four- and Five-Year-Old Children. J. Res. Math. Ed. 3: 77-88; Mar. 1972.

Steffe, Leslie P. and Johnson, David C. Problem-Solving Performances of First-Grade Children. J. Res. Math. Ed. 2: 50-64; Jan. 1971.

Stephens, Lois and Dutton, Wilbur H. The Development of Time Concepts by Kindergarten Children. Sch. Sci. Math. 69: 59-63; Jan. 1969.

Stern, Carolyn. Acquisition of Problem-Solving Strategies in Young Children and Its Relation to Verbalization. J. Ed. Psychol. 58: 245-252; Apr. 1967.

Stern, Carolyn and Keislar, Evan R. Acquisition of Problem Solving Strategies by Young Children and Its Relation to Mental Age. Am. Ed. Res. J. 4: 1-12; Jan. 1967.

Stewart, Lawrence H.; Dole, Arthur A.; and Harris, Yeuell Y. Cultural Differences in Abilities During High School. Am. Ed. Res. J. 4: 19-31; Jan. 1967.

Stodolsky, Susan A. and Karlson, Alfred L. Differential Outcomes of a Montessori Curriculum. El. Sch. J. 72: 419-433; May 1972.

Stone, Beth F. and Rawley, Vinton N. Educational Disability in Emotionally Disturbed Children. Excep. Child. 30: 423-426; May 1964.

Stovall, Gayden F. Long Distance Learning. AV Inst. 14: 20-23; Feb. 1969.

Strauss, Sidney and Langer, Jonas. Operational Thought Inducement. Child Develop. 41: 163-175; Mar. 1970.

Suppes, Patrick. Modern Learning Theory and the Elementary-School Curriculum. Am. Ed. Res. J. 1: 79-93; Mar. 1964.

Suppes, Patrick. The Ability of Elementary School Children to Learn the New Mathematics. Theory into Prac. 3: 57-61; Apr. 1964.

Suppes, Patrick. Mathematical Concept Formation in Children. Am. J. Psychol. 21: 139-150; Feb. 1966.

Suppes, Patrick. Accelerated Program in Elementary-School Mathematics - The Second Year. Psychol. in Sch. 3: 294-307; Oct. 1966.

Suppes, Patrick. Some Theoretical Models for Mathematics Learning. J. Res. Develop. Ed. 1: 5-22; Fall 1967.

Suppes, Patrick and Binford, Frederick. Experimental Teaching of Mathematical Logic in the Elementary School. Arith. Teach. 12: 187-195; Mar. 1965.

Suppes, Patrick and Feldman, Shirley. Young Children's Comprehension of Logical Connectives. J. Exp. Child Psychol. 12: 304-317; Dec. 1971.

Suppes, Patrick and Ihrke, Constance. Accelerated Program in Elementary-School Mathematics - The Third Year. Psychol. in Sch. 4: 293-309; Sept. 1967.

Suppes, Patrick and Ihrke, Constance. Accelerated Program in Elementary-School Mathematics - The Fourth Year. Psychol. in Sch. 7: 111-126; June 1970.

Suppes, Patrick; Jerman, Max; and Groen, Guy. Arithmetic Drills and Review on a Computer-Based Teletype. Arith. Teach. 13: 303-309; Apr. 1966.

Szetela, Walter. The Effects of Test Anxiety and Success/Failure on Mathematics Performance in Grade Eight. J. Res. Math. Ed. 4: 152-160; May 1973.

Tagatz, Glenn E.; Layman, Jane A.; and Needham, James R. Information Processing of Third and Fourth Grade Children. Contem. Ed. 42: 31-34; Oct. 1970.

Taylor, Alton L. Teacher and Student Evaluations of an Enriched Science and Mathematics Summer Program for Elementary and Secondary School Students. Sch. Sci. Math. 71: 283-294; Apr. 1971.

Ter Keurst, Arthur J. Rote Versus Discovery Learning. Sch. & Com. 55: 42, 44; Nov. 1968.

Thomas, Elizabeth C. and Yamamoto, Kaoru. Minority Children and Their School-Related Perceptions. J. Exp. Ed. 40: 89-96; Fall 1971.

Thompson, Gladys M. and Perrodin, Alex F. A Comparison of Arithmetic Achievement in England, Central California, and Georgia. Arith. Teach. 11: 181-185; Mar. 1964.

Thurlow, Virginia. Mathematical Understanding of Seventh- and Eighth-Grade Pupils, 1948 and 1963. Arith. Teach. 12: 43-44; Jan. 1965.

Traub, Ross E. Importance of Problem Heterogeneity to Programmed Instruction. J. Ed. Psychol. 57: 54-60; Jan. 1966.

Travers, Kenneth J. A Test of Pupil Preference for Problem-Solving Situations in Junior High School Mathematics. J. Exp. Ed. 35: 9-18; Summer 1967.

Traweek, Melvin W. The Relationship Between Certain Personality Variables and Achievement Through Programmed Instruction. Calif. J. Ed. Res. 15: 215-220; Nov. 1964.

Trent, John H.; Ray, Fenton; and Zimmerman, Donald. Effectiveness of University of Illinois Committee on School Mathematics (UICSM) "Stretchers and Shrinkers" and "Motion Geometry" Materials in Improving Arithmetic Ability. Sch. Sci. Math. 72: 822-827; Dec. 1972.

Trueblood, Cecil R. A Comparison of Two Techniques for Using Visual-Tactual Devices to Teach Exponents and Nondecimal Bases in Elementary School Mathematics. Arith. Teach. 17: 338-340; Apr. 1970.

Turkett, A. Keith and Purser, Jimmy V. Is Grouping for Mathematics Instruction Practicable in Departmentalized Mathematics Classes? Arith. Teach. 19: 61-64; Jan. 1972.

Ulrich, Roger E.; Louisell, Stephen E.; and Wolfe, Marshall. The Learning Village: A Behavioral Approach to Early Education. Ed. Tech. 11: 32-45; Feb. 1971.

Unkel, Esther. A Study of the Interaction of Socioeconomic Groups and Sex Factors with the Discrepancy Between Anticipated Achievement and Actual Achievement in Elementary School Mathematics. Arith. Teach. 13: 662-670; Dec. 1966.

Uprichard, A. Edward. The Effect of Sequence in the Acquisition of Three Set Relations; An Experiment with Preschoolers. Arith. Teach. 17: 597-604; Nov. 1970.

Usiskin, Zalman P. The Effects of Teaching Euclidean Geometry via Transformations on Student Achievement and Attitudes in Tenth-Grade Geometry. J. Res. Math. Ed. 3: 249-259; Nov. 1972.

Uzgiris, Ina C. Situational Generality of Conservation. Child Develop. 35: 831-841; Sept. 1964.

Vance, James H. and Kieren, Thomas E. Mathematics Laboratories - More Than Fun? Sch. Sci. Math. 72: 617-623; Oct. 1972.

VanderLinde, Louis F. Does the Study of Quantitative Vocabulary Improve Problem-Solving? El. Sch. J. 65: 143-152; Dec. 1964.

Van Engen, Henry and Parr, Robert B. Using Mass Communication Media to Improve Arithmetic Instruction. AV Inst. 14: 34-36, 38; Feb. 1969.

Verizzo, Ouida. Conceptions of Conservation and Reversibility in Children of Very Superior Intelligence. Sch. Sci. Math. 70: 31-36; Jan. 1970.

Very, Philip S. and Iacono, Carmine H. Differential Factor Structure of Seventh Grade Students. J. Genet. Psychol. 117: 239-251; Dec. 1970.

Von Brock, Robert. Measuring Arithmetic Objectives. Arith. Teach. 12: 537-542; Nov. 1965.

Wallach, Lise and Sprott, Richard L. Inducing Number Conservation in Children. Child Develop. 35: 1057-1071; Dec. 1964.

Wallach, Lise; Wall, Jack A.; and Anderson, Lorna. Number Conservation: The Roles of Reversibility, Addition-Subtraction, and Misleading Perceptual Cues. Child Develop. 38: 425-442; Mar. 1967.

Wang, Margaret C. Psychometric Studies in the Validation of an Early Learning Curriculum. Child Develop. 44: 54-60; Mar. 1973.

Wang, Margaret C.; Resnick, Lauren B.; and Boozer, Robert F. The Sequence of Development of Some Early Mathematical Behaviors. Child Develop. 42: 1767-1778; Dec. 1971.

Weaver, J. Fred. Patterns in Arithmetic: A Three-Year Report. Arith. Teach. 12: 291-293; Apr. 1965.

Weaver, J. Fred. Levels of Geometric Understanding Among Pupils in Grades 4, 5, and 6. Arith. Teach. 13: 686-690; Dec. 1966.

Weaver, J. Fred. Some Factors Associated with Pupils' Performance Levels on Simple Open Addition and Subtraction Sentences. Arith. Teach. 18: 513-519; Nov. 1971.

Weaver, J. F. The Ability of First-, Second-, and Third-Grade Pupils to Identify Open Addition and Subtraction Sentences for Which No Solution Exists Within the Set of Whole Numbers. Sch. Sci. Math. 72: 679-691; Nov. 1972.

Weaver, J. Fred. The Symmetric Property of the Equality Relation and Young Children's Ability to Solve Open Addition and Subtraction Sentences. J. Res. Math. Ed. 4: 45-56; Jan. 1973.

Weaver, J. Fred. Pupil Performance on Examples Involving Selected Variations of the Distributive Idea. Arith. Teach. 20: 697-704; Dec. 1973.

Wei, Tam T. D.; Lavatelli, Celia B.; and Jones, R. Stewart. Piaget's Concept of Classification: A Comparative Study of Socially Disadvantaged and Middle-Class Young Children. Child Develop. 42: 919-927; Sept. 1971.

Weinstein, Laura. The Zoomer Class: Initial Results. Excep. Child. 38: 58-65; Sept. 1971.

Weisman, Lorraine I. and Safford, Philip L. Piagetian Tasks as Classroom Evaluative Tools. El. Sch. J. 71: 329-338; Mar. 1971.

Weiss, Sol. What Mathematics Shall We Teach the Low Achiever? Math. Teach. 62: 571-575; Nov. 1969.

Werner, Sister Marijane. Computer-Assisted Planning and Scheduling of Individualized Programs of Study in Science and Mathematics at the Secondary Level. J. Ed. Res. 64: 127-132; Nov. 1970.

Westley, Bruce H. and Severin, Werner J. Viewer Location and Student Achievement. AV Comm. R. 13: 270-274; 1965.

White, William F. and Aaron, Robert L. Teachers' Motivation Cues and Anxiety in Relation to Achievement Levels in Secondary School Mathematics. J. Ed. Res. 61: 6-9; Sept. 1967.

Whitman, Nancy C. Project D: Program for Talented Students in Mathematics in Secondary Schools in Hawaii. Math. Teach. 59: 564-571; Oct. 1966.

Whittington, Kathryn D. and Lawler, Patricia R. Children's Perceptions of a Teaching Team. El. Sch. J. 72: 156-160; Dec. 1971.

Wiles, Clyde A.; Romberg, Thomas A.; and Moser, James M. The Relative Effectiveness of Two Different Instructional Sequences Designed to Teach the Addition and Subtraction Algorithms. J. Res. Math. Ed. 4: 251-262; Nov. 1973.

Willcutt, Robert E. Individual Differences - Does Research Have Any Answers for Junior High Mathematics Teachers? Sch. Sci. Math. 69: 217-225; Mar. 1969.

Willcutt, Robert E. Ability Grouping by Content Topics in Junior High School Mathematics. J. Ed. Res. 63: 152-156; Dec. 1969.

Williams, Alfred H. Mathematical Concepts, Skills and Abilities of Kindergarten Entrants. Arith. Teach. 12: 261-268; Apr. 1965.

Williams, Mary Heard and McCreight, Russell W. Shall We Move the Question? Arith. Teach. 12: 418-421; Oct. 1965.

Williams, Robert. Testing for Number Readiness: Application of the Piagetian Theory of the Child's Development of the Concept of Number. J. Ed. Res. 64: 394-396; May/June 1971.

Williams, S. Irene. A Survey of the Teaching of Mathematics in Secondary Schools. Sch. & Soc. 98: 244-246; Apr. 1970.

Williams, S. Irene. A Progress Report on the Implementation of the Recommendations of the Commission on Mathematics. Math. Teach. 63: 461-468; Oct. 1970.

Williford, Harold J. A Study of Transformational Geometry Instruction in the Primary Grades. J. Res. Math. Ed. 3: 260-271; Nov. 1972.

Willmon, Betty. Reading in the Content Area: A "New Math" Terminology List for the Primary Grades. El. Eng. 48: 463-471; May 1971.

Willson, George H. Decimal-Common Fraction Sequence Versus Conventional Sequence. Sch. Sci. Math. 72: 589-592; Oct. 1972.

Wilson, John W. The Role of Structure in Verbal Problem Solving. Arith. Teach. 14: 486-497; Oct. 1967.

Winer, Gerald A. Induced Set and Acquisition of Number Conservation. Child Develop. 39: 195-205; Mar. 1968.

Wittrock, M. C. and Keislar, Evan R. Verbal Cues in the Transfer of Concepts. J. Ed. Psychol. 56: 16-21; Feb. 1965.

Wohlwill, Joachim F. Responses to Class-Inclusion Questions for Verbally and Pictorially Presented Items. Child Develop. 39: 449-465; June 1968.

Worthen, Blaine R. Discovery and Expository Task Presentation in Elementary Mathematics. J. Ed. Psychol. 59: 1-13; Feb. 1968.

Worthen, Blaine R. A Study of Discovery and Expository Presentation: Implications for Teaching. J. Teach. Ed. 19: 223-242; Summer 1968.

Worthen, Blaine R. and Collins, James R. Reanalysis of Data from Worthen's Study of Sequencing in Task Presentation. J. Ed. Psychol. 62: 15-16; Feb. 1971.

Wozencraft, Marian. Correlations Among Stanford Achievement Test Scores, Intelligence, and Age by Level of Intelligence in Grades 3 and 6. Psychol. Reports 33: 235-238; Aug. 1973.

Wright, R. E. Something Old, Something New. Sch. Sci. Math. 70: 707-712; Nov. 1970.

Yamamoto, Kaoru; Thomas, Elizabeth C.; and Karns, Edward A. School-Related Attitudes in Middle-School Age Students. Am. Ed. Res. J. 6: 191-206; Mar. 1969.

Yawkey, Thomas D. Alternative Response Measures for Mathematical Behaviors on Numerical Tasks in Preschool Subjects. J. Exp. Ed. 40: 88-96; Winter 1971.

Yeager, John L. and Lindvall, C. M. An Exploratory Investigation of Selected Measures of Rate of Learning. J. Exp. Ed. 36: 78-81; Winter 1967.

Youssef, Zakhour I. and Guardo, Carol J. The Additive Composition of Classes: The Role of Perceptual Clues. J. Genet. Psychol. 121: 197-205; Dec. 1972.

Zahn, Karl G. Use of Class Time in Eighth-Grade Arithmetic. Arith. Teach. 13: 113-120; Feb. 1966.

Zahorik, John A. Individual Instruction and Group Instruction: A Case Study. J. Ed. Res. 62: 453-455; July/Aug. 1969.

Zaslow, Robert W. Reversals in Children as a Function of Body Orientation. J. Ed. Psychol. 57: 133-139; June 1966.

Zeiler, Michael D. and Gardner, Ann M. Intermediate Size Discrimination in Seven- and Eight-Year-Old Children. J. Exp. Psychol. 71: 203-207; Feb. 1966.

Zimmerman, Barry J. and Rosenthal, Ted L. Observation, Repetition, and Ethnic Background in Concept Attainment and Generalization. Child Develop. 43: 605-613; June 1972.

Zweng, Marilyn J. Division Problems and the Concept of Rate. Arith. Teach. 11: 547-556; Dec. 1964.

2. ELEMENTARY AND SECONDARY SCHOOL MATHEMATICS (K-12) 1964-1973

DISSERTATIONS

Abate, Charles Edwin. An Evaluation of an Individualized Educational System in an Elementary School. (Columbia University, 1972.) Dis. Abst. Int. 33A: 4234; Feb. 1973.

Abbott, Robert Franklin. The Prediction of First Grade Reading and Numbers Achievement by Means of Psychological Tests. (University of Tennessee, 1963.) Dis. Abst. 25: 1020-1021; Aug. 1964.

Abeles, Francine. College Preparatory Programs in Geometry of Four Nations: A Critique for the Study of U.S.A. Programs. (Columbia University, 1964.) Dis. Abst. 25: 4567-4568; Feb. 1965.

Abeles, Sigmund. The Utilization of Certain Mathematical Skills in the Solution of Selected Problems in Physics: A Comparison of the Ability of Selected Groups of Physical Science Study Committee Physics Students and New York State Regents Physics Students to Solve Problems in Physics Involving the Use of Mathematical Skills. (New York University, 1966.) Dis. Abst. 27A: 2435-2436; Feb. 1967.

Ackerman, Arthur Peter. The Effect of Pupil Tutors on Arithmetic Achievement of Third-Grade Students. (University of Oregon, 1969.) Dis. Abst. Int. 31A: 918; Sept. 1970.

Ackerman, Judy Ellen Lipton. Individual Learning Variability in Mathematics: Conceptual Tempo and Strategy. (University of North Carolina at Chapel Hill, 1972.) Dis. Abst. Int. 33A: 1501; Oct. 1972.

Ackerson, Paul Berndt. A Study of the Relationship Between Achievement in PSSC Physics and Experience in Recently Developed Courses in Science and Mathematics. (Oklahoma State University, 1965.) Dis. Abst. 27A: 44; July 1966.

Adams, Leah Dutenhaver. The Effect of Training on the Linear Ordering Ability of Prekindergarten Disadvantaged Children. (University of Michigan, 1970.) Dis. Abst. Int. 31A: 6391; June 1971.

Adams, Lillian Josephine Hunter. Developing and Testing a Procedure for Presenting Selected Instructional Materials for Utilization in Programs for Learning Handicapped Children. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 5227; Apr. 1971.

Adamson, David Phillips. Differentiated Multi-Track Grouping vs. Uni-Track Educational Grouping in Mathematics. (Brigham Young University, 1971.) Dis. Abst. Int. 32A: 3771; Jan. 1972.

Ahmad, Saleh. A Comparative Study of the Changes in the Foundations and Fundamental Concepts of the Euclidean Plane Geometry. (Colorado State College, 1969.) Dis. Abst. Int. 31B: 275-276; July 1970.

Aims, Bernard Douglas. A Study of Selected Relationships Between Solution Time and Five Characteristics of Arithmetic Drill Problems. (Memphis State University, 1970.) Dis. Abst. Int. 31A: 4373; Mar. 1971.

Alam, Sami Jamil. A Comparative Study of Gifted Students Enrolled in Separate and Regular Curriculums. (Wayne State University, 1968.) Dis. Abst. 29A: 3354; Apr. 1969.

Albers, Dallas Frederick. An Investigation of the Effects of the Allocation of Class Time on Pupil Achievement and Scheduling Preferences. (University of Missouri-Columbia, 1972.) Dis. Abst. Int. 33A: 4700; Mar. 1973.

Albert, Sylvio Hilaire. The Educational Attainment of Indian Pupils in Integrated and Segregated Elementary Schools in New York State. (Lehigh University, 1971.) Dis. Abst. Int. 32A: 2292; Nov. 1971.

Alberti, Jean Mae C. Self-Perception-in-School: Validation of an Instrument and a Study of the Structure of Children's Self-Perception-in-School and Its Relationship to School Achievement, Behavior, and Popularity. (State University of New York at Buffalo, 1970.) Dis. Abst. Int. 31A: 4535-4536; Mar. 1971.

Aldrich, Byron Vinson. A Study of Classification and Piaget's Theory of Concrete Operations. (University of Michigan, 1970.) Dis. Abst. Int. 31A: 2164-2165; Nov. 1970.

Alford, Roy W., Jr. Teaching Mathematical Concepts to Rural Preschool Children Through a Home-Oriented Program. (University of Virginia, 1970.) Dis. Abst. Int. 31A: 4373-4374; Mar. 1971.

Al-Hadad, Sabah. Mathematical Art, An Approach to Developing Aids for Teaching Mathematics. (Arizona State University, 1972.) Dis. Abst. Int. 33A: 3938; Feb. 1973.

Ali, Md Basharat. To Establish the Feasibility of Using Translated and Adapted Versions of an American-Made Mathematics Achievement Test in East Pakistan. (Colorado State College, 1964.) Dis. Abst. 28A: 115-116; July 1967.

Allen, Bruce Arthur. An Assessment of Comprehension of Certain Rational Number Equivalence Classes. (Boston University School of Education, 1973.) Dis. Abst. Int. 34A: 1575; Oct. 1973.

Al-Nasser, Bhani Visissobha. The Relationship Between the Cultural Background of Disadvantaged Children and Their Performance on an Arithmetic Test. (Ohio State University, 1971.) Dis. Abst. Int. 32A: 6281; May 1972.

Alsaqqar, Abdulhameed Mohammed. New Direction for Iraqi Intermediate School Mathematics. (Syracuse University, 1963.) Dis. Abst. 25: 3908; Jan. 1965.

Amendola, Anthony A. Changes in Attitude and Achievement Effected by a Continuous Progress Education Program at the Elementary School Level. (Arizona State University, 1973.) Dis. Abst. Int. 33A: 4702; Mar. 1973.

Ammon, Richard Irvin, Jr. An Analysis of Oral and Written Responses in Developing Mathematical Problems Through Pictorial and Written Stimuli. (Pennsylvania State University, 1972.) Dis. Abst. Int. 34A: 1056-1057; Sept. 1973.

Anderson, Doloris Gerkewicz. An Analysis of the Effect of Mathematics Readiness Education at the Kindergarten Level on the Growth of Conceptual Ability of Number as Measured by Piaget's Stages of the Development of Number. (Oregon State University, 1971.) Dis. Abst. Int. 32A: 2292-2293; Nov. 1971.

Anderson, Richard Mark. A Study of Cadet Teaching as a Method to Improve the Multiplication and Division Proficiency of a Selected Sample of Junior High School Students. (University of Iowa, 1970.) Dis. Abst. Int. 31A: 2782; Dec. 1970.

Anderson, Robert Arnold. Mathematical Student Achievement of Third Form (Ninth Grade) Students in London and St. Paul-Minneapolis Metropolitan Areas. (University of Minnesota, 1964.) Dis. Abst. 25: 5008; Mar. 1965.

Anderson, Rosemary C. A Comparison of Two Procedures for Finding the Least Common Denominator in the Addition of Unlike, Unrelated Fractions. (University of Iowa, 1965.) Dis. Abst. 26: 5901; Apr. 1966.

Andrejczak, Eugene Raymond. The Development of the Concept of Volume. (Catholic University of America, 1972.) Dis. Abst. Int. 33B: 1262-1263; Sept. 1972.

Andrews, Ernest Edgar. An Analysis of the Role of Geometry at the Pre-Deductive Level in School Mathematics Programs. (Oklahoma State University, 1966.) Dis. Abst. 27A: 4148-4149; June 1967.

Andrews, Henry B., Jr. The Effects of Group Contingent Reinforcement on Student Behavior. (University of Tennessee, 1970.) *Dis. Abst. Int.* 32A: 227-228; July 1971

Anglin, John Bennett. The Value of Selected Ninth Grade Tests and Algebra Grades in Predicting Success in Modern Geometry. (Indiana University, 1966.) *Dis. Abst.* 27A: 1696; Dec. 1966.

Anselmo, Fe Gaddi. An Investigation of the Nature and Development of Time Concepts in Elementary School Children. (Michigan State University, 1967.) *Dis. Abst.* 28A: 2088; Dec. 1967.

Anttonen, Ralph George. An Examination into the Stability of Mathematics Attitude and Its Relationship to Mathematics Achievement from Elementary to Secondary School Level. (University of Minnesota, 1967.) *Dis. Abst.* 28A: 3011-3012; Feb. 1968.

Appel, Ida J. The Relationship Between the Sequence of Graph Interpretation Skills and the Sequence of Mathematics Skills for Kindergarten Through Ninth Grade. (Fordham University, 1973.) *Dis. Abst. Int.* 34A: 116; July 1973.

Archibald, Paul Lee. The Status of Modern Mathematics in Grades One Through Six in the Public Schools of Mississippi. (Mississippi State University, 1967.) *Dis. Abst.* 29A: 52-53; July 1968.

Armstrong, Jenny Rose. The Relative Effectives of Two Forms of Spiral Curriculum Organization and Two Modes of Presentation on Mathematical Learning. (University of Wisconsin, 1968.) *Dis. Abst.* 29A: 141; July 1968.

Armstrong, Prince Winston. The Ability of Fifth and Sixth Graders to Learn Selected Topics in Probability. (University of Oklahoma, 1972.) *Dis. Abst. Int.* 33B: 810; Aug. 1972.

Arnold, Richard Dean. The Relationship of Teachers' Sex to Assigned Marks and Tested Achievement Among Upper Elementary Grade Boys and Girls. (University of Minnesota, 1966.) *Dis. Abst.* 27A: 2265; Feb. 1967.

Arnold, William Ramon. Knowledge of Vocabulary, Ability to Formulate Equations, and Ability to Solve Verbal Problems: An Investigation of Relationships. (University of Oregon, 1968.) *Dis. Abst.* 29A: 2031-2032; Jan. 1969.

Arrants, Glen Clyburn. An Individually Prescribed Instructional Program Using Behavioral Objectives with Primary Educable Mentally Retarded Children. (Duke University, 1972.) *Dis. Abst. Int.* 33A: 4973; Mar. 1973.

Arulsigamoni, A. The Relationship Between Self-Concept and School Achievement in Low-Achieving, Junior High School Children and the Effect of Counseling Intervention on Self-Concept. (American University, 1972.) Dis. Abst. Int. 34A: 187-188; July 1973.

Arvin, Charles Lee. An Experimental Study of Programed Instruction in Multiplication of Fractions. (Colorado State College, 1965.) Dis. Abst. 26: 7109; June 1966.

Asbury, Charles Alexander. Factors Associated with Discrepant Achievement in Rural Economically Deprived White and Negro First Graders. (University of North Carolina at Chapel Hill, 1969.) Dis. Abst. Int. 31A: 208-209; July 1970.

Ashlock, Robert B. A Test of Understandings of Selected Properties of a Number System: Primary Form. (Indiana University, 1965.) Dis. Abst. 27A: 321-322; Aug. 1966.

Atkinson, Thomas Page. The Effect of Surface and Modaility upon the Identification of Geometric Shapes. (University of Oregon, 1972.) Dis. Abst. Int. 33A: 4783; Mar. 1973.

Atwood, Marjie Henrietta. Teacher Effectiveness in Writing Terminal Objectives as Measured Through Student Participation in a Preschool Readiness Program. (United States International University, 1971.) Dis. Abst. Int. 32A: 1835; Oct. 1971.

Austin, Gary Francis. Knowledge of Selected Concepts Attained by the Deaf Adolescent Population. (Northwestern University, 1973.) Dis. Abst. Int. 34A: 3186; Dec. 1973.

Austin, Gilbert Raymond. A Study of Programmed Instruction Response Styles and Reinforcement Schedules for Teaching Multiplication of Fractions. (University of Connecticut, 1965.) Dis. Abst. 26: 5218; Mar. 1966.

Axton, Charles B., II. The Use of Previously Learned Mathematics Concepts to Introduce Concepts of Rhythm Notation to Third-Grade Children. (University of Kansas, 1969.) Dis. Abst. Int. 30A: 3036; Jan. 1970.

Babbott, Edward French. The Differential Effectiveness of Eight 9th Grade Variables in Predicting Success in Three 10th Grade Academic Subjects at Summit High School: A Study in Differential Prediction. (New York University, 1963.) Dis. Abst. 25: 993-994; Aug. 1964.

Babel, Simon Edward. Evaluation of Certain Approaches to Curriculum Development Used in the Dearborn Public Elementary Schools with Special Reference to Their Application to Improvement of the Arithmetic Curriculum. (Wayne State University, 1963.) Dis. Abst. 24: 4463-4464; May 1964.

Bachman, Alfred Morry. Factors Related to the Achievement of Junior High School Students in Mathematics. (University of Oregon, 1968.) Dis. Abst. 29A: 2139; Jan. 1969.

Backman, Margaret Esther. Relationships of Ethnicity, Socioeconomic Status, and Sex to Patterns of Mental Abilities. (Columbia University, 1970.) *Dis. Abst. Int.* 33B: 4988; Apr. 1973.

Bailey, Herman Perry. A Study of the Effectiveness of Ability Grouping on Success in First Year Algebra. (St. Louis University, 1967.) *Dis. Abst.* 28A: 3061-3062; Feb. 1968.

Bailey, James Melton. A Comparison of Two Approaches Designed to Improve the Computational Skills of Pupils in Grades Five and Seven. (North Texas State University, 1973.) *Dis. Abst. Int.* 34A: 1576; Oct. 1973.

Bailey, Joan Hauser. On the Concept of Transitivity in Children. (University of California, Los Angeles, 1970.) *Dis. Abst. Int.* 31B: 7618; June 1971.

Bailey, William Thomas. A Study of Group Reaction to and Productivity on a Mathematical Task Involving Productive Thinking. (New York University, 1971.) *Dis. Abst. Int.* 32A: 2474-2475; Nov. 1971.

Baker, Betty Louise. A Study of the Effects of Student Choice of Learning Activities on Achievement in Ninth Grade Pre-Algebra Mathematics. (Northwestern University, 1971.) *Dis. Abst. Int.* 32A: 2895; Dec. 1971.

Baker, Eugene Austin. Conservation and Two Related Cognitive Functions. (University of Missouri-Columbia, 1970.) *Dis. Abst. Int.* 31B: 4965; Feb. 1971.

Ball, Linda Virginia. Student Contracting for Achievement Grades in Ninth Grade General Mathematics. (University of Connecticut, 1973.) *Dis. Abst. Int.* 34A: 206; July 1973.

Ballew, Julius Hunter. A Study of the Effect of Discovery Learning Upon Critical Thinking Abilities of High School Algebra Students. (University of North Carolina at Chapel Hill, 1965.) *Dis. Abst.* 26: 3775; Jan. 1966.

Barcaski, Peter Bartholomew. Cognitive and Motivational Factors, Methods of Teaching, and Their Effects on Achievement, Transfer, and Retention of Pre-Sequenced Concepts. (Columbia University, 1969.) *Dis. Abst. Int.* 31A: 639; Aug. 1970.

Bargmann, Theodore John. An Investigation of Elementary School Grade Levels Appropriate for Teaching the Metric System. (Northwestern University, 1973.) *Dis. Abst. Int.* 34A: 3174; Dec. 1973.

Barnes, Ospy Dennis. The Effect of Learner Controlled Computer Assisted Instruction on Performance in Multiplication Skills. (University of Southern California, 1970.) Dis. Abst. Int. 31A: 4538; Mar. 1971.

Barnes, Paul Thomas. The Effects of Verbal Incentives Upon the Performance of Seventh Grade, Low Ability Pupils Utilizing a Simulated Academic Task. (University of Iowa, 1971.) Dis. Abst. Int. 32A: 5031; Mar. 1972.

Baroya, George Manoranjan. Reliability, Validity, and Comparability of Forms L and M of the "Verbal Reasoning" and the "Numerical Ability" Subtests of the Differential Aptitude Tests for Use in East Pakistan. (Colorado State College, 1966.) Dis. Abst. 27A: 2865-2866; Mar. 1967.

Barragy, Sister Micheleen. The Effect of Varying Object Arrangement and Number on Children's Ability to Coordinate Perspectives. (George Peabody College for Teachers, 1970.) Dis. Abst. Int. 31A: 2730; Dec. 1970.

Barrish, Bernard. Inductive Versus Deductive Teaching Strategies with High and Low Divergent Thinkers. (Stanford University, 1970.) Dis. Abst. Int. 31A: 4029; Feb. 1971.

Bartel, Elaine Vetter. A Study of the Feasibility of an Individualized Instructional Program in Elementary School Mathematics. (University of Wisconsin, 1965.) Dis. Abst. 26: 5284; Mar. 1966.

Barto, Joseph Allan. The Mathematics Program in Selected Junior High Schools, 1958-1965. (University of Nebraska Teachers College, 1966.) Dis. Abst. 27A: 3244-3245; Apr. 1967.

Bass, Helen Genetos. The Topological Understandings of Children in Kindergarten, First, and Second Grades. (Columbia University, 1970.) Dis. Abst. Int. 31A: 3946; Feb. 1971.

Bat-Haee, Mohammad Ali. A Comparison of Two Methods of Finding the Least Common Denominator of Unlike Fractions at Fifth-Grade Level in Relation to Sex, Arithmetic Achievement, and Intelligence. (Southern Illinois University, 1968.) Dis. Abst. 29A: 4365; June 1969.

Baughman, Gerald Don. Germane Material Criteria for Promoting the General Heuristic Cognitive Theme of the Cambridge Conference on School Mathematics. (Claremont Graduate School and University Center, 1967.) Dis. Abst. 29A: 506-507; Aug. 1968.

Baumann, Reemt Rikkelds. Children's Understanding of Selected Mathematical Concepts in Grades Two and Four. (University of Wisconsin, 1965.) Dis. Abst. 26: 5219-5220; Mar. 1966.

Beal, Jackie Lee. An Evaluation of Activity Oriented Materials Developed to Help the Low Achiever Attain Basic Mathematical Competencies. (University of Nebraska, 1972.) Dis. Abst. Int. 33A: 3249-3250; Jan. 1973.

Beamer, Robert Harlan. Transfer After Training with Single vs. Multiple Tasks by Individuals and Pairs of Low and High Ability Fifth Graders. (Illinois State University, 1970.) Dis. Abst. Int. 31A: 2730; Dec. 1970.

Beamish, Eric Edward. A Short Study Film for Teaching the Solution of Simple Problems in Multiplication Using the C and D Scales of the Slide Rule. (Columbia University, 1967.) Dis. Abst. 28A: 4520-4521; May 1968.

Beard, Earl M. L. An Axiom System for High School Geometry Based on Isometries. (University of Wisconsin, 1968.) Dis. Abst. 29A: 1667-1668; Dec. 1968.

Beardslee, Edward Clarke. Toward a Theory of Sequencing: Study 1-7: An Exploration of the Effect of Instructional Sequences Involving Enactive and Iconic Embodiments on the Ability to Generalize. (Pennsylvania State University, 1972.) Dis. Abst. Int. 33A: 6721; June 1973.

Beaton, Mary Anne. A Study of Underachievers in Mathematics at the Tenth Grade Level in Three Calgary High Schools. (Northwestern University, 1966.) Dis. Abst. 27A: 3215-3216; Apr. 1967.

Beavers, Elizabeth Cassandra. The Effects of Certain Anxiety-Producing Techniques on Achievement Testing and Motivation in High School Geometry Classes. (University of Oklahoma, 1970.) Dis. Abst. Int. 31A: 1065; Sept. 1970.

Bechtold, Charles August. The Use of Extraneous Material in Developing Problem-Solving Ability of Pupils in Algebra I. (Columbia University, 1965.) Dis. Abst. 26: 3105; Dec. 1965.

Becker, Jerry Page. An Attempt to Design Instructional Techniques in Mathematics to Accommodate Different Patterns of Mental Ability. (Stanford University, 1967.) Dis. Abst. 28A: 957-958; Sept. 1967.

Becklund, Lester Albert. Independent Study: An Investigation of the Effectiveness of Independent Study of Novel Mathematics Materials in the Elementary School. (University of Minnesota, 1968.) Dis. Abst. 29A: 3452; Apr. 1969.

Bedwell, Thomas Howard. A Critical Analysis of the Physical Science and Supporting Mathematics Instruction in the Secondary Schools of South Dakota. (University of Nebraska, 1966.) Dis. Abst. 27A: 1696-1697; Dec. 1966.

Beebe, Jewels Daniel. Self Concept and Achievement Among Elementary Students in an Experimental Program. (University of North Dakota, 1972.) *Dis. Abst. Int.* 33A: 6580-6581; June 1973.

Beeson, Richard O'Neil, Jr. Immediate Knowledge of Results and Test Performance. (University of Arkansas, 1970.) *Dis. Abst. Int.* 31A: 920; Sept. 1970.

Beggs, Donald Lee. Uniformity of Growth in the Basic Skills Throughout the School Year and During the Summer. (University of Iowa, 1966.) *Dis. Abst.* 27A: 2866-2867; Mar. 1967.

Begum, Kamrunnessa. The Construction of Objective Achievement Tests in Arithmetic for Classes One Through Five in Bengali Medium Schools in Dacca, Pakistan. (Colorado State College, 1969.) *Dis. Abst. Int.* 30A: 4299-4300; Apr. 1970.

Behr, Merlyn James. A Study of Interactions Between "Structure-of-Intellect" Factors and Two Methods of Presenting Concepts of Modulus Seven Arithmetic. (Florida State University, 1967.) *Dis. Abst.* 28A: 1698; Nov. 1967.

Bell, James A. Trends in Secondary Mathematics in Relation to Psychological Theories: 1893-1970. (University of Oklahoma, 1971.) *Dis. Abst. Int.* 32A: 1890-1891; Oct. 1971.

Bell, Max S. Studies with Respect to the Uses of Mathematics in Secondary School Curricula. (University of Michigan, 1969.) *Dis. Abst. Int.* 30A: 3813-3814; Mar. 1970.

Bellamy, Edward Ellsworth. A Study of Productive Thinking in Mentally Retarded Children. (University of Illinois at Urbana-Champaign, 1971.) *Dis. Abst. Int.* 32A: 4411; Feb. 1972.

Beman, Alma Theresa. Piagetian Theory Examined Cross-Culturally: A Tri-Ethnic Study of Children's Responses to Piagetian Tasks of Conservation and Combinations. (Rice University, 1972.) *Dis. Abst. Int.* 33B: 1759; Oct. 1972.

Beninati, Albert F. A Study of Articulation Between College and High School Mathematics. (Columbia University, 1963.) *Dis. Abst.* 25: 317-318; July 1964.

Benner, Carl Virgil. Applying Paired Comparison Techniques to Determine the Relative Importance Assigned to Selected Mathematical Behaviors. (Ohio State University, 1970.) *Dis. Abst. Int.* 31A: 4614-4615; Mar. 1971.

Benson, Francis Arthur Mitchell. An Examination Over an Eight Month Period of Piaget's Concept of Number Development and the Presence or Absence of Certain Interrelated Tasks in a Group of First Grade Children. (University of Oregon, 1966.) Dis. Abst. 27A: 3300; Apr. 1967.

Beougher, Elton Earl. Relationships Between Success of Advanced Placement Mathematics Programs and Various Administrative, School and Community Factors. (University of Michigan, 1968.) Dis. Abst. Int. 30A: 195-196; July 1969.

Berglund, Elizabeth Ella Newell. A Study of the Ontogenesis of Productive Thinking in Five-, Six-, and Seven-Year-Old Children. (Boston University School of Education, 1967.) Dis. Abst. 29A: 4316; June 1969.

Bernabei, Raymond. A Logical Analysis of Selected Achievement Tests in Mathematics. (Western Reserve University, 1966.) Dis. Abst. 27A: 4121-4122; June 1967.

Bernard, Richard Paul. The Historical Development of the Laboratory Approach to Elementary School Mathematics. (Indiana University, 1972.) Dis. Abst. Int. 33A: 5028; Mar. 1973.

Berrios, Jorge Efrain. The Effects of Departmentalization on Achievement in Reading and Arithmetic on Fourth Grade Pupils in Public Schools of Puerto Rico. (Lehigh University, 1970.) Dis. Abst. Int. 31A: 5023-5024; Apr. 1971.

Bessant, Helen Pearl. The Effects of Semantic Familiarity and Information Load on the Arithmetic Verbal Problem Solving Performance of Children in Special Classes for the Educable Mentally Retarded. (University of Connecticut, 1972.) Dis. Abst. Int. 33A: 2787; Dec. 1972.

Beste, Celestine A. A Critical Appraisal of Programmed Learning in Relationship to Secondary School Geometry. (Catholic University of America, 1963.) Dis. Abst. 24: 4048; Apr. 1964.

Bezdek, Jim Joseph. A Comparison of Two Approaches to the Teaching of Plane and Solid Geometry. (Cornell University, 1966.) Dis. Abst. 28A: 150-151; July 1967.

Biancoviso, Anthony Nicholas. A Multiple Training Approach to Facilitate the Acquisition of Number Conservation in Children. (University of Kansas, 1971.) Dis. Abst. Int. 32A: 1911; Oct. 1971.

Biddle, John Charles. Effectiveness of Two Methods of Instruction of High School Geometry on Achievement, Retention, and Problem Solving Ability. (Indiana University, 1966.) Dis. Abst. 27A: 3356; Apr. 1967.

Bidwell, Cecile Gayzik. An Experimental Study of Student Achievement in Learning Per Cent as Affected by Teaching Method and Teaching Pattern. (Temple University, 1968.) Dis. Abst. Int. 30A: 919; Sept. 1969.

Bidwell, James King. A Comparative Study of the Learning Structures of Three Algorithms for the Division of Fractional Numbers. (University of Michigan, 1968.) Dis. Abst. 29A: 830; Sept. 1968.

Biegen, David Allan. The Effects of Irrelevant and Immaterial Data on Problem Difficulty. (University of Cincinnati, 1971.) Dis. Abst. Int. 32A: 3774; Jan. 1972.

Bierden, James Edward. Provisions for Individual Differences in Seventh Grade Mathematics Based on Grouping and Behavioral Objectives: An Exploratory Study. (University of Michigan, 1968.) Dis. Abst. Int. 30A: 196-197; July 1969.

Binkley, Marvin Edward. First Grade Entrance Variables Related to Achievement and Personality, a Study of Culturally Deprived Fourth Graders. (University of Tennessee, 1967.) Dis. Abst. 28A: 2065-2066; Dec. 1967.

Biot, John James. A Study of the Relationship Between Children's Ability to Conserve Area and Their Performance with Common Fractions at Age Six and Seven. (New York University, 1970.) Dis. Abst. Int. 31B: 2810-2811; Nov. 1970.

Birr, Donald James. The Effects of Treatments by Parents and Teachers on the Self-Concept of Ability Held by Underachieving Early Adolescent Pupils. (Michigan State University, 1969.) Dis. Abst. Int. 30A: 1354; Oct. 1969.

Bishop, Thomas David. A Study of the Computer-Related Mathematics Programs of Secondary Schools and Teacher Education Institutions in Missouri and Adjoining States. (University of Missouri-Columbia, 1970.) Dis. Abst. Int. 31A: 3997-3998; Feb. 1971.

Bisio, Robert Mario. Effect of Manipulative Materials on Understanding Operations with Fractions in Grade V. (University of California, Berkeley, 1970.) Dis. Abst. Int. 32A: 833; Aug. 1971.

Blaeuer, David Allan. Gifted College and Secondary Mathematics Students--Process Oriented Case Studies of Creativity. (State University of New York at Buffalo, 1973.) Dis. Abst. Int. 34A: 2454; Nov. 1973.

Blair, Frank S. A Comparison of Programmed Instruction and the Conventional Lecture-Discussion Method of Instruction in Teaching Algebra I in the Ogden City Schools. (Brigham Young University, 1963.) Dis. Abst. 24: 4465-4466; May 1964.

Blazek, Ronald David. Teacher Utilization of Nonrequired Library Materials in Mathematics and the Effect on Pupil Use. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 994; Aug. 1971.

Blocker, Richard Daniel, Jr. Religious Content in State-Approved Textbooks Used in American Public Secondary Schools in the Fields of Language Arts, Mathematics, Science, and Social Studies During the Year 1966. (American University, 1968.) Dis. Abst. 29A: 1144-1145; Oct. 1968.

Bobbe, Carol Norwalk. Sex-Role Preference and Academic Achievement. (Yeshiva University, 1971.) Dis. Abst. Int. 32B: 1818-1819; Sept. 1971.

Bobier, Darold Thomas. The Effectiveness of the Independent Use of Programmed Textbooks in Aiding Students to Overcome Skill Weaknesses in English Mechanics and Arithmetic. (University of Denver, 1964.) Dis. Abst. 25: 3424-3425; Dec. 1964.

Bodden, R. Virginia. The Relationship of Certain Thinking Operations and Academic Achievement. (Yeshiva University, 1972.) Dis. Abst. Int. 33A: 1071; Sept. 1972.

Boe, Barbara Lamphere. A Study of the Ability of Secondary School Pupils to Perceive the Plane Sections of Selected Solid Figures. (University of Wisconsin, 1966.) Dis. Abst. 28A: 387; Aug. 1967.

Boersig, Teresa Marie. The Effects of Instruction in the Enactive Mode of Representation on Multivariable Verbal Problems Encountered in Elementary Algebra. (Purdue University, 1973.) Dis. Abst. Int. 34A: 3230; Dec. 1973.

Bogart, Charles Bunner and Waian, Warren Henry. The Effect of a Pontoon Transitional Design on the Performance of Seventh and Eighth Grade Students in a Non-Public Secondary School. (Both authors received degrees at University of Southern California, 1971.) Dis. Abst. Int. 32A: 4479; Feb. 1972.

Bohan, Harry Joseph. A Study of the Effectiveness of Three Learning Sequences for Equivalent Fractions. (University of Michigan, 1970.) Dis. Abst. Int. 31A: 6270; June 1971.

Boland, Sandra Kay. Assessment of Conservation of Two-Dimensional Space, Substance, Continuous Quantity, and Weight with Retarded and Average Children. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 1040-1041; Sept. 1972.

Bolduc, Elroy Joseph, Jr. A Factorial Study of the Effects of Three Variables on the Ability of First-Grade Children to Solve Arithmetic Addition Problems. (University of Tennessee, 1969.) Dis. Abst. Int. 30A: 3358; Feb. 1970.

Bonfield, John Ronald. Predictors of Achievement for Educable Mentally Retarded Children. (Pennsylvania State University, 1968.) Dis. Abst. Int. 30A: 1009; Sept. 1969.

Bonney, Lewis Alfred. Relationships Between Content Experience and the Development of Seriation Skills in First Grade Children. (University of Arizona, 1970.) Dis. Abst. Int. 31A: 2167; Nov. 1970.

Boozer, Robert Foster. An Investigation of Selected Procedures for the Development and Evaluation of Hierarchical Curriculum Structures. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 4616; Mar. 1971.

Borgen, Jerome Stanley. The Effect of Two Modes of Instruction on Creativity, Dogmatism, and Arithmetic Achievement in the Elementary School. (University of North Dakota, 1970.) Dis. Abst. Int. 31A: 6446-6447; June 1971.

Bostic, Doyle Leroy. A Developmental Approach for Introducing the Concept of Proof Utilizing Informal Logic. (Florida State University, 1970.) Dis. Abst. Int. 31B: 5468-5469; Mar. 1971.

Botwin, Judith Rita. Summer and School Year Correlates of Academic Achievement. (Western Reserve University, 1965.) Dis. Abst. 27A: 383-384; Aug. 1966.

Bowen, Collin Weldon. The Use of Self-Estimates of Ability and Measures of Ability in the Prediction of Academic Performance. (Oklahoma State University, 1968.) Dis. Abst. Int. 30A: 978; Sept. 1969.

Bowen, James Joseph. The Use of Games as an Instructional Media. (University of California, Los Angeles, 1969.) Dis. Abst. Int. 30A: 3358-3359; Feb. 1970.

Bowers, Robert Garth. Toward a Theory of Sequencing: Study 1-4: An Exploration of the Effect of Congruent Triangle-Pair Configuration Variation on Achievement of Selected Classes of Instructional Objectives in Plane Geometry. (Pennsylvania State University, 1971.) Dis. Abst. Int. 32A: 6181-6182; May 1972.

Boyd, Alvin Lyle. Computer Aided Mathematics Instruction for Low-Achieving Students. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 34A: 553; Aug. 1973.

Boyden, Joanne Marie. Construction of a Diagnostic Test in Verbal Arithmetic Problem Solving at the Fifth Grade Level. (University of Miami, 1970.) Dis. Abst. Int. 31A: 1504; Oct. 1970.

Bracht, Glenn Herbert. The Relationship of Treatment Tasks, Personological Variables, and Dependent Variables to Aptitude-Treatment Interactions. (University of Colorado, 1969.) Dis. Abst. Int. 30A: 4268; Apr. 1970.

Bradford, Equilla Forrest. A Comparison of Two Methods of Teaching in the Elementary School as Related to Achievement in Reading, Mathematics, and Self-Concept of Children. (Michigan State University, 1972.) Dis. Abst. Int. 33A: 4786; Mar. 1973.

Bradley, Richard Moore. An Experimental Study of Individualized Versus Blanket-Type Homework Assignments in Elementary School Mathematics. (Temple University, 1967.) Dis. Abst. 28A: 3874; Apr. 1968.

Brager, Gary Lee. A Study of the Phenomenon of Experimenter Bias Using Three Types of Classroom Tasks. (University of Maryland, 1968.) Dis. Abst. 29A: 4316-4317; June 1969.

Brainerd, Charles Jon. The Construction of the Formal Operations of Implication-Reasoning and Proportionality in Children and Adolescents. (Michigan State University, 1970.) Dis. Abst. Int. 31B: 6919-6920; May 1971.

Bramwell, John Robertson. Arithmetic Achievement and Recall as a Function of Interpolated Activity in the Inter-Response Interval and Learner Ability Under Two Conditions of Information Feedback. (University of Oregon, 1970.) Dis. Abst. Int. 31A: 2168; Nov. 1970.

Branca, Nicholas Anthony. Strategies in Learning Mathematical Structures. (Columbia University, 1970.) Dis. Abst. Int. 31A: 3160; Jan. 1971.

Brandt, John Henry, Jr. The Effects on Mathematics Achievement of Three Different Practice Amounts with Elementary Children in Selected Title I Schools. (University of Oklahoma, 1973.) Dis. Abst. Int. 34A: 1687; Oct. 1973.

Brantley, Betty Conrad. Effect of a Sibling Tutorial Program on the Language and Number Concept Development of Head Start Children. (Florida State University, 1970.) Dis. Abst. Int. 32A: 300; July 1971.

Brantly, Brythel Henry. An Analysis of the Effects of Absenteeism Upon Academic Achievement Related to Algebra II and English III in Certain Public High Schools of Louisiana. (Northeast Louisiana University, 1971.) Dis. Abst. Int. 32A: 113; July 1971.

Braswell, James Sidney, III. The Formative Evaluation of Patterns in Arithmetic, Grade 6, Using Item Sampling. (University of Wisconsin, 1969.) Dis. Abst. Int. 31A: 672; Aug. 1970.

Braxton, Loretta Murray. The Effects of Instruction in Sentential Logic on the Growth of the Logical Thinking Abilities of Junior High School Students. (University of Virginia, 1973.) Dis. Abst. Int. 34A: 657-658; Aug. 1973.

Bree, David Sidney. The Understanding Process as Seen in Geometry Theorems. (Carnegie-Mellon University, 1969.) Dis. Abst. Int. 30A: 1675; Nov. 1969.

Breen, Joseph Michael. Differential Prediction of Intermediate Grade Skills Achievement from Primary Grade Aptitude and Achievement Measures. (University of Connecticut, 1965.) *Dis. Abst.* 26: 5260; Mar. 1966.

Brewer, Barbara Anne. Continuous Complex Learning of Preschool Children. (University of Hawaii, 1969.) *Dis. Abst. Int.* 30A: 4268-4269; Apr. 1970.

Brewer, Emery. A Survey of Arithmetic Intra-Class Grouping Practices in the Elementary Schools of Ohio. (Ohio State University, 1963.) *Dis. Abst.* 24: 4466; May 1964.

Bring, Curtis Ray. Effects of Varying Concrete Activities on the Achievement of Objectives in Metric and Non-Metric Geometry by Students of Grades Five and Six. (University of Northern Colorado, 1971.) *Dis. Abst. Int.* 32A: 3775; Jan. 1972.

Brinke, Dirk Pieter Ten. Homework: An Experimental Evaluation of the Effect on Achievement in Mathematfcs in Grades Seven and Eight. (University of Minnesota, 1964.) *Dis. Abst.* 27A: 4176; June 1967.

Brison, David Wilber. Acquisition of Conservation of Substance in a Group Situation. (University of Illinois, 1965.) *Dis. Abst.* 26: 2583; Nov. 1965.

Brod, Rodney Lynn. The Computer as an Authority Figure: Some Effects of CAI on Student Perception of Teacher Authority. (Stanford University, 1972.) *Dis. Abst. Int.* 33A: 139; July 1972.

Brodlie, Jerome Flagg. An Examination of the Relevance of Piaget's Theory of "Logical Multiplication" to Modern Elementary School Mathematics. (Columbia University, 1966.) *Dis. Abst.* 27B: 2154-2155; Dec. 1966.

Bronder, Cecilia Colette. The Application of Diagnostic Teaching and a Mathematic [sic] Laboratory to a Middle School Individualized Unit on Fractions. (University of Pittsburgh, 1973.) *Dis. Abst. Int.* 34A: 1579; Oct. 1973.

Broomes, Desmond Rodwell. Psychological and Sociological Correlates of Mathematical Achievement and Ability Among Grade 9 Students. (University of Toronto (Canada), 1971.) *Dis. Abst. Int.* 33B: 1183-1184; Sept. 1972.

Broussard, Vernon. The Effect of an Individualized Instructional Approach on the Academic Achievement in Mathematics of Inner-City Children. (Michigan State University, 1971.) *Dis. Abst. Int.* 32A: 2999-3000; Dec. 1971.

Brown, Claude Kenneth. A Study of Four Approaches to Teaching Equivalent Fractions to Fourth-Grade Pupils. (University of California, Los Angeles, 1972.) *Dis. Abst. Int.* 33A: 5465; Apr. 1973.

Brown, Lynn Harold. A Comparison of a "Teaching for Thinking" Approach and a Conventional Approach to the Teaching of Algebra I. (University of Iowa, 1969.) Dis. Abst. Int. 30A: 3850-3851; Mar. 1970.

Browning, Carole Livingston. An Investigation of Selected Mathematical Terminology Found in Five Series of Modern Mathematics Texts Used in Grades Four, Five, and Six. (Florida State University, 1970.) Dis. Abst. Int. 32A: 2899-2900; Dec. 1971.

Brudenell, Gerald Alfred. Predicting Achievement of Head Start Children Using Personal, Testing, and Rating Data. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4269; Apr. 1970.

Brumbaugh, Douglas Kent. Isolation of Factors Which Influence the Ability of Young Children to Associate Solids with Representations of Those Solids. (University of Georgia, 1969.) Dis. Abst. Int. 30A: 5335; June 1970.

Bruni, James Vincent. A Study of Mathematical Education in the Public Elementary and Secondary Schools of Italy. (Columbia University, 1967.) Dis. Abst. 28B: 3368-3369; Feb. 1968.

Brunner, Joseph Francis. An Evaluation of an Academic Design to Upgrade the Achievement Scores of Children in the Washington D.C. Public Schools. (University of Massachusetts, 1972.) Dis. Abst. Int. 33A: 4996; Mar. 1973.

Brunner, Regina Baron. The Construction and Construct Validation of a Reading Comprehension Test of Mathematical Exposition. (Syracuse University, 1971.) Dis. Abst. Int. 32A: 4235-4236; Feb. 1972.

Brush, Lorelei Ruth. Children's Conceptions of Addition and Subtraction: The Relation of Formal and Informal Notions. (Cornell University, 1972.) Dis. Abst. Int. 33B: 4989; Apr. 1973.

Brust, Joseph Vincent. The Relationship of Individualized Instruction in Learning Skills to Self-Esteem and Achievement. (Columbia University, 1972.) Dis. Abst. Int. 33A: 97; July 1972.

Bryson, James Robert. The Design and Evaluation of a Program for Low Achievers in Ninth Grade General Mathematics. (University of Mississippi, 1972.) Dis. Abst. Int. 33A: 69; July 1972.

Buchalter, Barbara Diane Elpern. The Validity of Mathematics Textbook Series in Grades 7-14 with Structure as an Objective. (University of Arizona, 1968.) Dis. Abst. Int. 30A: 198-199; July 1969.

Buchana, O. Lexton, Jr. A Unit on Limits for the Twelfth-Year Course in Mathematics. (University of Kansas, 1964.) *Dis. Abst.* 26: 219; July 1965.

Buchanan, Aaron Dean. An Experimental Study of Relationships Between Mastery of a Superordinate Mathematical Task and Prior Experience with a Special Case. (University of Washington, 1971.) *Dis. Abst. Int.* 32A: 6091; May 1972.

Buchanan, Van Dyk. Beginning Instruction in Writing Numerals in Kindergarten. (University of California, Los Angeles, 1966.) *Dis. Abst.* 27A: 3217; Apr. 1967.

Buchman, Aaron L. Some Relationships Between Length of Courses in Elementary Algebra and Student Characteristics. (State University of New York at Albany, 1972.) *Dis. Abst. Int.* 33A: 2812; Dec. 1972.

Buckner, Sam Levi. First-Year Algebra in Selected Junior High Schools and High Schools. (Auburn University, 1970.) *Dis. Abst. Int.* 31A: 3999-4000; Feb. 1971.

Budgy, Joseph Vincent. A Comparative Study of the Relative Achievement of a First Grade Group Using Greater Cleveland Mathematics Program Material and a First Grade Group Using Traditional Mathematics Material. (Rutgers, The State University, 1968.) *Dis. Abst.* 29A: 2142; Jan. 1969.

Buechele, Walter Eugene, Jr. An Investigation of Selected Personal Factors as Related to Success in Arithmetic Achievement Utilizing a CAI Mode of Presentation. (Temple University, 1972.) *Dis. Abst. Int.* 33A: 2066-2067; Nov. 1972.

Buethe, Lorain Chris. A Feasibility Study of Unit and Dimensional Analysis in High School. (University of Nebraska Teachers College, 1965.) *Dis. Abst.* 26: 5903-5904; Apr. 1966.

Bull, Mary Revicz. A Comparison of the Goal-Setting Behavior of Achieving and Underachieving Elementary School Boys and Their Parents. (The University of Florida, 1965.) *Dis. Abst.* 27B: 961; Sept. 1966.

Bull, Scott Spragg. A Comparison of the Achievement of Geometry Students Taught by Individualized Instruction and Traditional Instruction. (Arizona State University, 1971.) *Dis. Abst. Int.* 31A: 4616-4617; Mar. 1971.

Bumby, Douglas Robert. The Effects of Modifying Explanatory and Illustrative Material in a Seventh Grade Experimental Mathematics Textbook. (Columbia University, 1973.) *Dis. Abst. Int.* 34A: 2907; Dec. 1973.

Bunch, Martha Anne. A Study of the Effects on Retention and on the Problem-Solving Ability of Students When Geometry Is Used as an Aid in Teaching Factoring of Second-Degree Polynomials. (University of Missouri-Kansas City, 1972.) Dis. Abst. Int. 34A: 1057-1058; Sept. 1973.

Bundrick, Charles Michael. A Comparison of Two Methods of Teaching Selected Topics in Plane Analytic Geometry. (Florida State University, 1968.) Dis. Abst. Int. 30A: 485-486; Aug. 1969.

Burbank, Irvin Kimball. Relationships Between Parental Attitude Toward Mathematics and Student Attitude Toward Mathematics, and Between Student Attitude Toward Mathematics and Student Achievement in Mathematics. (Utah State University, 1968.) Dis. Abst. Int. 30A: 3359-3360; Feb. 1970.

Burchyett, James Albert. A Comparison of the Effects of Nongraded, Multi-Age, Team Teaching vs. the Modified Self-Contained Classroom at the Elementary School Level. (Michigan State University, 1972.) Dis. Abst. Int. 33A: 5998-5999; May 1973.

Burdick, Charles Philip. A Study of the Effects of Academic Acceleration on Learning and on Retention of Learning Addition in the Set of Integers. (Syracuse University, 1969.) Dis. Abst. Int. 31A: 54-55; July 1970.

Burgess, Ernest Edward. A Study of the Effectiveness of the Planned Usage of Mathematical Games on the Learning of Skills and Concepts and on the Attitude Toward Mathematics and the Learning of Mathematics of Low Achieving Secondary Students. (Florida State University, 1969.) Dis. Abst. Int. 30A: 5333-5334; June 1970.

Burke, Harold Reesor. A Study in Public School Accountability Through the Application of Multiple Regression to Selected Variables. (Indiana University, 1972.) Dis. Abst. Int. 33A: 4661-4662; Mar. 1973.

Burkhart, Lewis Leland. A Study of Two Modern Approaches to the Development of Understanding and Skills in Division of Whole Numbers. (Case Western Reserve University, 1967.) Dis. Abst. 28A: 3877; Apr. 1968.

Burningham, George Leland. A Study and Evaluation of the Team Teaching at the Fourth Grade at Woodstock Elementary School. (University of Utah, 1968.) Dis. Abst. 29A: 770; Sept. 1968.

Burns, Barbara Jean. The Effect of Self-Directed Verbal Commands on Arithmetic Performance and Activity Level of Urban Hyperactive Children. (Boston College, 1972.) Dis. Abst. Int. 33B: 1782-1783; Oct. 1972.

Burns, James Alden. The Teaching of Applications in Secondary School Mathematics. (Indiana University, 1970.) Dis. Abst. Int. 31A: 5870; May 1971.

Burron, Douglas Stuart. The Ability of Selected Sixth Grade Pupils to Function at a Variety of Cognitive Levels on Selected Mathematical Tasks. (University of Northern Colorado, 1971.) Dis. Abst. Int. 32A: 3775-3776; Jan. 1972.

Burrow, Daniel Alfred. Summer Tutoring: An Investigation of Older Volunteer Students Tutoring Younger Students in Arithmetic Computation. (University of Maryland, 1970.) Dis. Abst. Int. 31A: 2244; Nov. 1970.

Butt, Dil-Nawaz. The Development and Application of Selected Criteria for Writing Elementary School Mathematics Textbooks. (Indiana University, 1966.) Dis. Abst. 28A: 46-47; July 1967.

Byars, Jackson Abbott. The Relationship Between Teacher Conformity to a Model of Teaching Behavior and Student Achievement and Student Attitude in a First Course in Algebra. (University of Nebraska, 1970.) Dis. Abst. Int. 31A: 5264; Apr. 1971.

Bybee, Frances. The Relationship Between Psycholinguistic Abilities and Reading and Arithmetic Achievement of Second Grade Children. (University of New Mexico, 1972.) Dis. Abst. Int. 33A: 6751-6752; June 1973.

Byham, Frederick Charles. Indirect Proof in Geometry from Euclid to the Present. (Ohio State University, 1969.) Dis. Abst. Int. 30A: 2899; Jan. 1970.

Byrne, Mary Ann. The Development of a Measure of the Familiarity of Mathematical Terms and Symbols. (Purdue University, 1970.) Dis. Abst. Int. 31A: 5222-5223; Apr. 1971.

Caezza, John Francis. A Study of Teacher Experience, Knowledge of and Attitude Toward Mathematics and the Relationship of These Variables to Elementary School Pupils' Attitudes Toward and Achievement in Mathematics. (Syracuse University, 1969.) Dis. Abst. Int. 31A: 921-922; Sept. 1970.

Cahoon, Owen William. Group Training on Conservation Tasks in a Preschool Setting. (Pennsylvania State University, 1970.) Dis. Abst. Int. 32A: 780; Aug. 1971.

Cain, Mary Alexander. A Study of Relationships Between Selected Factors and the School Achievement of Mexican-American Migrant Children. (Michigan State University, 1970.) *Dis. Abst. Int.* 31A: 3947; Feb. 1971.

Cain, Ralph Winston. An Analysis of the Achievement of Students in Selected High School Biology Programs in Relation to Their Mathematical Aptitude and Achievement. (University of Texas, 1964.) *Dis. Abst.* 25: 5149-5150; Mar. 1965.

Caldwell, James Renwick. Structure-of-Intellect Factor Abilities Relating to Performance in Tenth-Grade Modern Geometry. (University of Southern California, 1969.) *Dis. Abst. Int.* 31A: 212-213; July 1970.

Callahan, William T. The Impact of the National Defense Education Act (Title III) on Selected Elementary School Districts in the State of New Jersey. (Fordham University, 1963.) *Dis. Abst.* 25: 2306; Oct.1964.

Callister, Sheldon Lathel. Stress, Anxiety, and Achievement Relationships in Programmed and Conventional Algebra and Geometry Classes. (Brigham Young University, 1965.) *Dis. Abst.* 26: 5860; Apr. 1966.

Camp, John Stephen. The Effects of Distributed Practice Upon Learning and Retention in Introductory Algebra. (Columbia University, 1973.) *Dis. Abst. Int.* 34A: 2455-2456; Nov. 1973.

Camp, Martha Gwendolyn. Determination of the Correlation Between Conservation Task Levels and Memory Drawings and the Prediction of Conservation Task Levels of Children Through the Use of Memory Drawings. (Florida State University, 1971.) *Dis. Abst. Int.* 32A: 1912; Oct. 1971.

Campbell, Azzie Leely. A Comparison of the Effectiveness of Two Methods of Class Organization for the Teaching of Arithmetic in Junior High School. (Pennsylvania State University, 1964.) *Dis. Abst.* 26: 813-814; Aug. 1965.

Campbell, Byron Lee. Prediction of Elementary Pupils' Scores on a Test of Cognitive Skills in Geometry Achievement. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 33A: 69; July 1972.

Cangelosi, James S. The Construction and Refinement of a Test for Analytical Cognition of Mathematical Content. (Louisiana State University and Agricultural and Mechanical College, 1972.) *Dis. Abst. Int.* 33A: 2233; Nov. 1972.

Caraher, Rita Catherine. The Development of the Concept of Congruence for Triangles. (Columbia University, 1972.) Dis. Abst. Int. 33A: 1017; Sept. 1972.

Carey, Joseph Edward. The Relationship Between Creative Thinking Ability, Intellectual Ability, Educational Achievement, and Writing Ability of Sixth Grade Children. (Indiana University, 1966.) Dis. Abst. 27A: 2095; Jan. 1967.

Cargill, Jonathan D. Evaluation of Developmental First Grade Classes in Oklahoma City Public Schools. (University of Oklahoma, 1972.) Dis. Abst. Int. 34A: 1690; Oct. 1973.

Carlisle, Earnest. An Experimental Study of Number Concepts of Five Year Old Children. (Auburn University, 1968.) Dis. Abst. 29A: 3318; Apr. 1969.

Carlow, Chester Dauphiny. A Study of Variables Within the Method of Individually Guided Discovery in Secondary School Mathematics: The Experimental Comparison of Conceptual Structures, Consolidation, and Learner's Personality with Learning, Retention, and Transfer by Ninth Grade College Preparatory Males. (Syracuse University, 1967.) Dis. Abst. 29A: 180; July 1968.

Carlson, Richard Tepper. An Investigation Into the Effects Student Tutoring Has on Self-Concept and Arithmetic Computation Achievement of Tutors and Tutees. (Northern Illinois University, 1973.) Dis. Abst. Int. 34A: 2265; Nov. 1973.

Carlson, Roger David. Non-Conservation of Distance: Composition Error, Class Inclusion Error, and Task Ambiguity. (University of Oregon, 1972.) Dis. Abst. Int. 33B: 2314-2315; Nov. 1972.

Carmody, Lenora Marie. A Theoretical and Experimental Investigation Into the Role of Concrete and Semi-Concrete Materials in the Teaching of Elementary School Mathematics. (Ohio State University, 1970.) Dis. Abst. Int. 31A: 3407; Jan. 1971.

Carnes, DuWayne Douglas. A Study of the Critical Thinking Ability of Secondary Summer School Mathematics Students. (University of Mississippi, 1969.) Dis. Abst. Int. 30A: 2242; Dec. 1969.

Carney, Harold Francis. The Relative Effectiveness of Two Methods of Teaching the Addition and Subtraction of Rational Numbers. (New York University, 1973.) Dis. Abst. Int. 34A: 659-660; Aug. 1973.

Carpenter, Thomas Phelps. The Role of Equivalence and Order Relations in the Development and Coordination of the Concepts of Unit Size and Number of Units in Selected Conservation Type Measurement Problems. (University of Wisconsin, 1971.) *Dis. Abst. Int.* 32A: 4482; Feb. 1972.

Carr, Dan Baker. An Investigation of an Inservice Education Program for Teachers of Secondary School Mathematics in Selected Parishes of North Louisiana. (University of Mississippi, 1971.) *Dis. Abst. Int.* 32A: 3832; Jan. 1972.

Carr, Donna Humpherys. The Development of Number Concept as Defined by Piaget in Advantaged Children Exposed to the Bereiter-Engelmann Preschool Materials and Training. (University of Utah, 1970.) *Dis. Abst. Int.* 31A: 3947-3948; Feb. 1971.

Carri, Louis. Relationships Between Sociometrics and Academic Achievement Among Four Groups of Children in Selected Class Placements. (University of New Mexico, 1972.) *Dis. Abst. Int.* 33A: 6752; June 1973.

Carrico, Mark Andrew. An Assessment of the Children's Television Program "Sesame Street" in Relation to the Attainment of the Program's Goals by Kindergarten Children in the Sioux Falls, South Dakota Public Schools. (University of South Dakota, 1971.) *Dis. Abst. Int.* 32A: 2297; Nov. 1971.

Carroll, Constance Anne. Low Achievers' Understanding of Four Logical Inference Forms: An Analysis of Difficulties and of the Effect of Instruction. (Columbia University, 1970.) *Dis. Abst. Int.* 31A: 4377; Mar. 1971.

Carruth, Edwin Ronald. A Multiple Linear Regression Analysis of Computer-Assisted Elementary Arithmetic Achievement. (University of Southern Mississippi, 1970.) *Dis. Abst. Int.* 31A: 5691; May 1971.

Carry, Laroy Ray. Interaction of Visualization and General Reasoning Abilities with Instructional Treatment in Algebra. (Stanford University, 1968.) *Dis. Abst.* 29A: 475-476; Aug. 1968.

Carson, Joan Carol. The Status of School-Preparatory Activities by Parents of Children from Disadvantaged Homes and the Development of a Series of Booklets of Suggested Preschool Activities for These Children. (University of Mississippi, 1971.) *Dis. Abst. Int.* 32A: 3552; Jan. 1972.

Carter, Helen Randolph. How Mental Operations Are Reflected in Children's Language Through Use of the Lavatelli Early Childhood Curriculum. (University of Oklahoma, 1972.) *Dis. Abst. Int.* 33A: 612; Aug. 1972.

Cary, Lee Allan. A Comparative Analysis of the Sub-Test Scores of Two Groups of Deaf Children for the Chicago Non-Verbal Examination and the Reading and Arithmetic Reasoning Sections of the Stanford Achievement Test. (University of Denver, 1964.) Dis. Abst. 25: 7023-7024; June 1965.

Case, David Aree. A Comparative Study of Fifth Graders in a New Middle School with Fifth Graders in Elementary Self Contained Classrooms. (University of Florida, 1970.) Dis. Abst. Int. 32A: 86; July 1971.

Case, James Burnell. Treating Chemical Equilibrium Mathematically in Secondary Schools: A Preliminary Investigation. (University of Toledo, 1968.) Dis. Abst. 29A: 2601-2602; Feb. 1969.

Castaneda, Alberta Maxine Mondor. The Differential Effectiveness of Two First Grade Mathematics Programs for Disadvantaged Mexican-American Children. (University of Texas, 1967.) Dis. Abst. 28A: 3878-3879; Apr. 1968.

Catanzano, Robert Joseph. A Comparison of the Effects of Two Methods of Testing on Student Achievement in Intermediate Algebra. (University of Georgia, 1971.) Dis. Abst. Int. 32A: 3833; Jan. 1972.

Cech, Joseph Philip. The Effect the Use of Desk Calculators Has on Attitude and Achievement in Ninth-Grade General Mathematics Classes. (Indiana University, 1970.) Dis. Abst. Int. 31A: 2784; Dec. 1970.

Centrone, Joseph John, Sr. Teacher Sociocultural Awareness in Selected Schools in New York State Accountable for American Indian Education. (Syracuse University, 1972.) Dis. Abst. Int. 33A: 5596-5597; Apr. 1973.

Chaing, George Chi-Yung. An Evaluation of Seventh and Eighth Grade Mathematics Curriculum in Taiwan, Republic of China. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 4322-4323; Feb. 1972.

Chandler, Arnold Marvin. The Effect of Mathematics Curriculum Materials on the Perceived Behavior of Urban Junior High School Teachers of Low Achievers. (University of Wisconsin, 1971.) Dis. Abst. Int. 32A: 4440; Feb. 1972.

Chapel, Dewey Elbert. The Relationship of a Programmed Study Skills Unit to the Academic Achievement of a Selected Group of Eighth Grade Students. (North Texas State University, 1965.) Dis. Abst. 26: 3694; Jan. 1966.

Chapman, Judith Ellen. Mirror-Image Discrimination in Pre-School Children. (University of Minnesota, 1970.) *Dis. Abst. Int.* 31B: 6279; Apr. 1971.

Chatburn, Dean Nimrod. The Influence of Selected Kindergarten Programs on Pupil Achievement in Language, Social Studies, and Mathematics at the First Grade Level. (Utah State University, 1973.) *Dis. Abst. Int.* 33A: 6645; June 1973.

Chatterley, Louis Joseph. A Comparison of Selected Modes of Individualized Instruction in Mathematics for Effectiveness and Efficiency. (University of Texas at Austin, 1972.) *Dis. Abst. Int.* 33A: 4663-4664; Mar. 1973.

Cheatham, Ben H., Jr. A Comparison of Two Methods of Introducing Selected Geometric Concepts to Seventh Grade Students. (University of Florida, 1969.) *Dis. Abst. Int.* 31A: 1132; Sept. 1970.

Crew, Harold Raymond. Using Operant Conditioning and Contingency Management in Teaching Arithmetic. (University of Pittsburgh, 1970.) *Dis. Abst. Int.* 31A: 4583-4584; Mar. 1971.

Chiappetta, Eugene Louis. The Effectiveness of Verbal Label Training in Aiding Second Grade Pupils to Transfer Their Classificatory Skill. (Syracuse University, 1972.) *Dis. Abst. Int.* 33A: 5545; Apr. 1973.

Child, Clyde Compton. A Study of the Effects of Summer School Programs on Student Achievement. (Brigham Young University, 1967.) *Dis. Abst.* 28A: 2475; Jan. 1968.

Chittenden, Edward Augustus. The Development of Certain Logical Abilities and the Child's Concepts of Substance and Weight: An Examination of Piaget's Theory. (Columbia University, 1964.) *Dis. Abst.* 25: 3096-3097; Nov. 1964.

Choe, Sae-Hyun. Family and Social Relationships as Factors Related to Academic Achievement of Korean Secondary School Students. (Fordham University, 1971.) *Dis. Abst. Int.* 32A: 781; Aug. 1971.

Christos, Constantine. Conceptual Tempo and Its Relationship to Academic Aptitude and School Achievement. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 6722-6723; June 1973.

Churchman, Frank Leslie. A Comparative Study of Three Different Approaches to the Limit Concept. (University of Georgia, 1972.) *Dis. Abst. Int.* 33A: 4665-4666; Mar. 1973.

Cibbarelli, Vincent Charles. An Analysis of the Effect of Teaching Rational Number Concepts and Operations Through Pre-Recorded Magnetic Tape. (University of Connecticut, 1969.) Dis. Abst. Int. 30A: 3668-3669; Mar. 1970.

Ciklamini, Joseph. An Investigation to Determine if Instruction in Set Concepts Enhances the Arithmetic Problem Solving Ability of Sixth Grade Children as Measured by the Bobbs-Merrill Arithmetic Achievement Test. (Rutgers, The State University, 1969.) Dis. Abst. Int. 30A: 1463; Oct. 1969.

Clark, Newton Cecil. Test Anxiety, Locus of Control, and Feedback in Self-Instruction. (George Peabody College for Teachers, 1971.) Dis. Abst. Int. 32A: 1912; Oct. 1971.

Clark, Van Deusen. A Comparison of the Achievement of SMSG Algebra Students and Modern Algebra Students Who Have Been Taught by Two Different Approaches. (Arizona State University, 1966.) Dis. Abst. 27A: 598-599; Sept. 1966

Clason, Robert Grant. Number Concepts in Arithmetic Texts of the United States from 1880 to 1966, with Related Psychological and Mathematical Developments. (University of Michigan, 1968.) Dis. Abst. Int. 30A: 146; July 1969.

Clausen, Thomas Greenwood. A Developmental Study of Children's Responses to Multi-Sensory Approach in Mathematics. (University of Southern Mississippi, 1971.) Dis. Abst. Int. 32A: 4830; Mar. 1972.

Clewell, Willard Stanley, Jr. A Study of the Effects of Teaching Intermediate Algebra and Chemistry as an Integrated Program in the Eleventh Grade. (Lehigh University, 1964.) Dis. Abst. 25: 7106; June 1965.

Clough, Roger Anthony. An Analysis of Student Achievement in Mathematics When Individually Prescribed Instruction (IPI) is Compared to the Current Instructional Program. (University of Nebraska, 1971.) Dis. Abst. Int. 32B: 2849; Nov. 1971.

Clover, Michael E. Study of the Feasibility of Computer Assisted Pupil Progress Reporting in 4th Grade Mathematics. (University of Iowa, 1972.) Dis. Abst. Int. 33A: 1312-1313; Oct. 1972.

Cobb, Joseph Arthur. The Relationship of Observable Classroom Behaviors to Achievement of Fourth Grade Pupils. (University of Oregon, 1969.) Dis. Abst. Int. 30A: 3315; Feb. 1970.

Cochran, Corydon Eugene. An Experimental Study of Achievement of Intermediate Educable Mentally Retarded Students. (Oklahoma State University, 1969.) Dis. Abst. Int. 31A: 4031; Feb. 1971.

Coffia, William J. The Effects of an Inquiry-Oriented Curriculum in Science on a Child's Achievement in Selected Academic Areas. (University of Oklahoma, 1971.) Dis. Abst. Int. 32A: 2398; Nov. 1971.

Cohen, Louis Sayles. An Investigation of the Effectiveness of Certain Scheduling Procedures on Mathematical Achievement of Junior High School Pupils. (University of Minnesota, 1970.) Dis. Abst. Int. 31A: 1995; Nov. 1970.

Cohen, Martin Seymour. A Comparison of Effects of Laboratory and Conventional Mathematics Teaching Upon Underachieving Middle School Boys. (Temple University, 1970.) Dis. Abst. Int. 31A: 5026-5027; Apr. 1971.

Coker, Homer. An Investigation of the Effects of a Cross-Age Tutorial Program on Achievement and Attitudes of Seventh Grade and Eleventh Grade Students. (University of South Carolina, 1968.) Dis. Abst. 29A: 3319-3320; Apr. 1969.

Coker, Jesse Monroe. A Comparison of Acceleration and Enrichment Methods of Teaching Arithmetic in the Elementary School. (University of Arkansas, 1965.) Dis. Abst. 26: 900-901; Aug. 1965.

Cole, Samuel Eugene. An Assessment of Mathematical Abilities of Secondary Students in Selected Schools of Puerto Rico. (University of Nebraska, 1970.) Dis. Abst. Int. 31A: 4032; Feb. 1971.

Cole, William L. The Evaluation of a One-Semester Senior High School Mathematics Course Designed for Acquiring Basic Mathematics Skills Using Computer-Assisted Instruction. (Wayne State University, 1971.) Dis. Abst. Int. 32A: 2399; Nov. 1971.

Collins, Fred Esly. A Study of the Relative Importance of Certain Factors in Prediction of Successful Performance in Seventh Grade Mathematics. (Oklahoma State University, 1967.) Dis. Abst. 29A: 118; July 1968.

Collins, Kenneth Michael. An Investigation of the Variables of Bloom's Mastery Learning Model for Teaching Junior High School Mathematics. (Purdue University, 1971.) Dis. Abst. Int. 32A: 3149; Dec. 1971.

Coltharp, Forrest Lee. A Comparison of the Effectiveness of an Abstract and a Concrete Approach in Teaching of Integers to Sixth Grade Students. (Oklahoma State University, 1968.) Dis. Abst. Int. 30A: 923-924; Sept. 1969.

Confer, Ronald William. The Effect of One Style of Computer Assisted Instruction on the Achievement of Students Who Are Repeating General Mathematics. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 1741; Oct. 1971.

Connolly, Austin Jay. An Instrument of Measurement to Appraise the Arithmetic Abilities of Educable Mentally Retarded Children Ages Thirteen Through Sixteen. (Colorado State College, 1968.) Dis. Abst. 29A: 1034; Oct. 1968.

Cooke, Gary Edward. Conceptual Learning in Young Children: A Comparison of the Effects of Rote, Principle, and Guided Discovery Strategies on Conceptualization in First Grade Children. (University of Oregon, 1971.) Dis. Abst. Int. 32A: 2904; Dec. 1971.

Costantino, Peter Samuel. A Study of Differences Between Middle School and Junior High School Curricula and Teacher-Pupil Classroom Behavior. (University of Pittsburgh, 1968.) Dis. Abst. Int. 30A: 614; Aug. 1969.

Cotton, Timothy S. An Empirical Test of the Binomial Error Model Applied to Criterion-Referenced Tests. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 6186; May 1972.

Cottrell, Raymond Sheary, Jr. A Study of Selected Language Factors Associated with Arithmetic Achievement of Third Grade Students. (Syracuse University, 1967.) Dis. Abst. 28B: 4193-4194; Apr. 1968.

Covey, Donald David. An Analytical Study of Secondary Freshmen Bilingual Education and Its Effect on Academic Achievement and Attitude of Mexican American Students. (Arizona State University, 1973.) Dis. Abst. Int. 33A: 4789; Mar. 1973.

Covington, Richard John Lee. An Analysis of Readability of Third and Fourth Grade Modern Mathematics Textbooks Using the Cloze Procedure. (University of California, Los Angeles, 1966.) Dis. Abst. 27A: 3219; Apr. 1967.

Cowan, Richard Emerson. The Development and Classroom Testing of a Projective Geometry Unit for Tenth-Grade Geometry. (University of Oregon, 1973.) Dis. Abst. Int. 34A: 1058-1059; Sept. 1973.

Cox, Linda Ann Simon. A Study of Pupil Achievement in Mathematics and Teacher Competence in Mathematics. (University of Kansas, 1970.) Dis. Abst. Int. 31A: 2767-2768; Dec. 1970.

Coxford, Arthur Frank, Jr. The Effects of Two Instructional Approaches on the Learning of Addition and Subtraction Concepts in Grade One. (University of Michigan, 1965.) Dis. Abst. 26: 6543-6544; May 1966.

Coyle, Sister John Vianney. A Longitudinal Assessment of Preschool Children in Haptic Learning. (Boston College, 1968.) *Dis. Abst. Int.* 30A: 165; July 1969.

Crabtree, Joseph Farris, II. An Investigation of the Ability of Specially Selected Children in Grades K-2 to Learn Certain Concepts, Operations and Applications of Directed Numbers. (University of Virginia, 1965.) *Dis. Abst.* 26: 5907-5908; Apr. 1966.

Cragg, John Clive. A Statistical Analysis of Some Aspects of the Pupil Placement Program in Three High Schools of a Metropolitan School System. (University of Georgia, 1966.) *Dis. Abst.* 27A: 2308; Feb. 1967.

Craig, Francis Harrel. A Comparison of Two Programmed Methods of Teaching Measurement Conversion to Seventh Grade Students. (Southern Illinois University, 1972.) *Dis. Abst. Int.* 33A: 4791; Mar. 1973.

Crandell, Edwin Whitney. An Experimental Study: Team Teaching Compared with the Self-Contained Classroom Organization in Upper Elementary School Grades. (Wayne State University, 1966.) *Dis. Abst.* 27A: 2300-2301; Feb. 1967.

Crangle, Eva Abbie. An Evaluative Study of the Northwest Junior High School Individualized Mathematics Program. (University of Utah, 1971.) *Dis. Abst. Int.* 32A: 1774-1775; Oct. 1971.

Crawford, Douglas Houston. An Investigation of Age-Grade Trends in Understanding the Field Axioms. (Syracuse University, 1964.) *Dis. Abst.* 25: 5728-5729; Apr. 1965.

Crawford, Matthew William. An Analysis of the Mathematics Curriculum in the Negro Public High Schools in Louisiana. (Colorado State College, 1967.) *Dis. Abst.* 28A: 1611-1612; Nov. 1967.

Crespy, H. Victor. A Study of Curriculum Development in School Mathematics by National Groups, 1950-1966: Selected Programs. (Temple University, 1969.) *Dis. Abst. Int.* 31A: 923-924; Sept. 1970.

Creswell, Doris E. An Exploratory Study to Determine Techniques for Evaluating the Application of an Information System to Curriculum Decision-Making in Elementary School Mathematics. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 33A: 140; July 1972.

Crist, Thomas Vernon. A Comparison of the Use of the Active Game Learning Medium with Developmental-Meaningful and Drill Procedures in Developing Concepts for Telling Time at Third Grade Level. (University of Maryland, 1968.) *Dis. Abst.* 29A: 2548; Feb. 1969.

Cromack, Norman Eugene. The Central Jersey Mathematics League: A Description and an Assessment of Its Effects as Judged by the Participants. (Rutgers University, 1965.) Dis. Abst. 27A: 410-411; Aug. 1966.

Cromer, Fred Eugene. Structural Models for Predicting the Difficulty of Multiplication Problems. (George Peabody College for Teachers, 1971.) Dis. Abst. Int. 32A: 1974; Oct. 1971.

Cromie, Robert George. The Ontogeny of Linear Patterns Among Young Normal Children in an Economically-Disadvantaged Area. (University of Connecticut, 1971.) Dis. Abst. Int. 33A: 2688-2689; Dec. 1972.

Cronin, Robert Emmet. The Effect of Varying Amounts of Traditional and Modern Mathematics Instruction Relative to Sex and Intellectual Ability on Both the Traditional and Modern Mathematics Achievement of Eighth Grade Pupils. (Catholic University of America, 1967.) Dis. Abst. 28A: 2551; Jan. 1968.

Cronin, Virginia Smith. A Comparison of Three Methods of Mirror-Image Reversal Discrimination with Kindergarten and First Grade Children. (Cornell University, 1966.) Dis. Abst. 27B: 1279; Oct. 1966.

Crooks, Forrest Corydon. The Differential Effects of Pre-Prepared and Teacher-Prepared Instructional Objectives on the Learning of Educable Mentally Retarded Children. (University of Iowa, 1971.) Dis. Abst. Int. 32A: 5067; Mar. 1972.

Crowcroft, Harry Gordon. The Effect of Verbalization of Individually Derived Mathematical Generalizations on Transfer at Two Age Levels. (University of Maryland, 1973.) Dis. Abst. Int. 34A: 3233; Dec. 1973.

Crowder, Alex Belcher, Jr. A Comparative Study of Two Methods of Teaching Arithmetic in the First Grade. (North Texas State University, 1965.) Dis. Abst. 26: 3778; Jan. 1966.

Crowder, Richard Post. The Effect of a Modern Mathematics Program on Achievement in Arithmetic and on Intelligence Test Scores of Children in Grades Four Through Six in a Selected Air Force Dependent School. (University of Arkansas, 1969.) Dis. Abst. Int. 30A: 2901; Jan. 1970.

Currey, Charles Kitchen. A Research Study of the Effect of Review of Prior Concepts and Vocabulary Upon the Facility of Learning New Concepts in Mathematics. (University of California at Los Angeles, 1966.) Dis. Abst. 27A: 1701; Dec. 1966.

Curry, Richard Dean. Arithmetic Achievement as a Function of Concrete, Semi-Concrete, and Abstract Teaching Methods. (George Peabody College for Teachers, 1970. *Dis. Abst. Int.* 31A: 4032-4033; Feb. 1971.

Czarnec, Walter J. The Effects of Instruction in a Unit of Logic and Set Theory upon the Logical Reasoning and Critical Thinking Abilities of Seniors Studying Trigonometry. (University of Georgia, 1972.) *Dis. Abst. Int.* 33A: 4870-4871; Mar. 1973.

Dahle, Mary McMahon. A Procedure for the Measurment of the Content Validity of Standardized Tests in Elementary Mathematics. (University of Southern California, 1970.) *Dis. Abst. Int.* 30A: 5336; June 1970.

Dahmus, Maurice. The Lack of Uniformity in the Algebra I Texts Produced by the Ball STate, Southern Illinois, SMSG, and UICSM Modern Mathematics Projects. (University of Arkansas, 1968.) *Dis. Abst.* 29A: 181-182; July 1968.

Dain, Helene Mieses. Elementary School Mathematics Textbooks Used in California and in Four European Countries. (University of Southern California, 1967.) *Dis. Abst.* 28A: 48; July 1967.

Danley, James Odell. A Critique of the SMSG and UICSM Secondary School Mathematics Programs. (University of Oklahoma, 1966.) Dis. Abst. 27A: 1197; Nov. 1966.

Dansereau, Donald Francis. An Information Processing Model of Mental Multiplication. (Carnegie-Mellon University, 1969.) *Dis. Abst.* 30B: 1916; Oct. 1969.

Darnell, Charlotte Deane Potter. Effects of Age, Ability, and Five Training Procedures on Improvement of Simple Logical Thinking of Children. (University of Colorado, 1969.) *Dis. Abst. Int.* 30A: 579; Aug. 1969.

D'Augustine, Charles Henry. Factors Relating to Achievement with Selected Topics in Geometry and Topology When Taught to Fifth-, Sixth- and Seventh-Grade Pupils Via a Programed Text. (Florida State University, 1963.) *Dis. Abst.* 24: 4538-4539; May 1964.

Davidson, James Edward. The Impact of Selected Concrete Materials on the Understanding of Certain Mathematical Concepts by Grade 3 and Grade 4 Students. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 6232; May 1973.

Davidson, Walter Witte. A Comparison of Student Achievement in High School Mathematics and Science Courses Based on the Instructional Approach Used in Eighth Grade Mathematics. (University of Toledo, 1968.) *Dis. Abst.* 29A: 2514; Feb. 1969.

Davies, Thomas Peter. An Evaluation of Computer-Assisted Instruction Using a Drill-and-Practice Program in Mathematics. (United States International University, 1972.) *Dis. Abst. Int.* 32B: 6970; June 1972.

Davis, Earl Edwin. A Comparison of the First Year Academic Achievement of Educable Mentally Retarded Children Enrolled in Middle School Resource and Self-Contained Classrooms. (University of Alabama, 1972.) *Dis. Abst. Int.* 33A: 4977; Mar. 1973.

Davis, Edward J. A Study of the Ability of Selected School Pupils to Perceive the Plane Sections of Selected Solid Figures. (University of Florida, 1969.) *Dis. Abst. Int.* 31A: 57; July 1970.

Davis, Floyd Wayne. A Study of Three Methods of Utilizing Programed Algebra Textbooks. (University of California, Berkeley, 1966.) *Dis. Abst.* 27A: 2272-2273; Feb. 1967.

Davis, John B., Jr. An Investigation of the Interaction of Certain Instructional Strategies with the Structure of Basic Mental Abilities in the Learning of Some Mathematical Operations. (Florida State University, 1967.) *Dis. Abst.* 28A: 2551-]55]; Jan. 1968.

Davis, John Chester. Time Conservation: A Comparison of Performance of Piagetian Tasks by Selected Students. (East Texas State University, 1972.) *Dis. Abst. Int.* 33A: 1055; Sept. 1972.

Davis, John Newton. The Effects of High School Coordinate Geometry. (Stanford University, 1970.) *Dis. Abst. Int.* 31A: 2246; Nov. 1970.

Davis, Peter Henry. The Effectiveness of Several Widely Used Sixth Grade New Mathematics Publications in Teaching Initial Concepts. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 1412; Oct. 1972.

Davis, William Edmund. A Comparison of Paired-Associate Learning of Retardates Under Auditory and Visual Stimulus Conditions. (The University of Connecticut, 1968.) *Dis. Abst.* 29A: 2560; Feb. 1969.

Dean, Jerome Donovan. The Completion Review: A Quasi-Programed Procedure Experimentally Tested in the High School Mathematics Classroom. (Stanford University, 1967.) *Dis. Abst.* 28A: 4525; May 1968.

Dearborn, Donald Edward. An Investigation of Changes in Elementary School Organization and Selected Curriculum Areas in the Public School Systems of Virginia, 1960-1970. (George Washington University, 1972.) *Dis. Abst. Int.* 33A: 74; July 1972.

DeBlauw, Robert Allan. Effect of a Multimedia Program on Achievement and Attitudes of Elementary and Secondary Students. (Iowa State University, 1973.) *Dis. Abst. Int.* 34A: 2157; Nov. 1973.

Deep, Donald. The Effect of an Individually Prescribed Instruction Program in Arithmetic on Pupils at Different Ability Levels. (University of Pittsburgh, 1966.) *Dis. Abst.* 27A: 2310-2311; Feb. 1967.

Deer, George Wendell. The Effects of Teaching an Explicit Unit in Logic on Students' Ability to Prove Theorems in Geometry. (Florida State University, 1969.) *Dis. Abst. Int.* 30B: 2284-2285; Nov. 1969.

Deighan, William Patrick. An Examination of the Relationship Between Teachers' Attitudes Toward Arithmetic and the Attitudes of Their Students Toward Arithmetic. (Case Western Reserve University, 1970.) *Dis. Abst. Int.* 31A: 3333; Jan. 1971.

Del Gaudio, Jerome. A Study of the Academic Achievement of Pupils Exposed to Departmentalized and Non-Departmentalized Instruction in Grades Seven and Eight in Selected Inner City Elementary Schools in St. Louis, Missouri. (St. Louis University, 1970.) *Dis. Abst. Int.* 32A: 696; Aug. 1971.

Delidow. Stanley Victor. A Study of Inquiry and Conceptual Ideas at Selected Grade Levels. (Wayne State University, 1969.) *Dis. Abst. Int.* 30A: 3710; Mar. 1970.

Dellinger, Harry Vaughn. A Study of the Effectiveness of a Summer Head Start Program on the Achievement of First Grade Children. (University of Southern Mississippi, 1971.) *Dis. Abst. Int.* 32A: 4832; Mar. 1972.

DeLucia, Shirley Wood. Development of Review Packages for Improved Understanding and Use of Decimal Quantities by Upper Elementary Students. (Duke University, 1972.) *Dis. Abst. Int.* 33A: 4792; Mar. 1973.

Demars, Richard Joseph. A Comparative Study of Seventh Grade Low Achievers' Attitudes and Achievement in Mathematics Under Two Approaches, UICSM and Traditional. (University of Alabama, 1971.) *Dis. Abst. Int.* 32A: 4832-4833; Mar. 1972.

Dembo, Myron H. Small Group Problem Solving as a Technique for Effecting Behavior Change. (Indiana University, 1968.) *Dis. Abst.* 29A: 2998-2999; Mar. 1969.

Denmark, Ewell Thomas, Jr. A Comparative Study of Two Methods of Teaching Elementary Algebra Students To Use the Algebraic Technique To Solve Verbal Problems. (Florida State University, 1965.) *Dis. Abst.* 25: 5295-5296; Mar. 1965.

Dennis, John Richard. Teaching Selected Geometry Topics Via a Computer System. (University of Illinois, 1968.) Dis. Abst. 29A: 2145; Jan. 1969.

Denoyer, Richard Armand. A Study of the Effect of Age and Sex on School Achievement in Grades Three, Six, Seven and Nine. (Southern Illinois University, 1970.) Dis. Abst. Int. 31A: 3950; Feb. 1971.

DePasarell, Claudina Luiggi. A Study to Determine the Effect of Kindergarten Experience on the Achievement of Students in Mathematics and Spanish in the First, Second, and Third Grades in a Selected Public School in Puerto Rico. (New York University, 1970.) Dis. Abst. Int. 31A: 3409; Jan. 1971.

DeShields, James Isiah. Factors Effecting [sic] Achievement in ESEA Title I Schools and Non-ESEA Title I Schools. (University of Massachusetts, 1973.) Dis. Abst. Int. 33A: 6585; J[illegible] 1973.

Deshpande, Anant Sakharam. Development of a Battery for the Lower Continuum of Basic Achievement of Common Knowledge and Skills. (University of Georgia, 1968.) Dis. Abst. 29A: 2999; Mar. 1969.

Dethmers, Claer. Self-Concept, Value Orientation, and Achievement Level of Lower Class Elementary School Children in Two Types of Educational Programs. (University of Minnesota, 1968.) Dis. Abst. Int. 30A: 579-580; Aug. 1969.

Devane, James Ralph. An Exploratory Study of the Relationship Between Factors of Self-Concept and Over-Under Achievement in Arithmetic. (University of Georgia, 1972.) Dis. Abst. Int. 33A: 4932-4933; Mar. 1973.

Devine, Donald F. Student Attitudes and Achievement: A Comparison Between the Effects of Programed Instruction and Conventional Classroom Approach in Teaching Algebra I at Rich Township High Schools. (Colorado State College, 1967.) Dis. Abst. 28A: 535; Aug. 1967.

Devlin, Robert Joseph. An Attempt to Determine the Reinforcing Effect of KCR for Subjects with Different IQ and Socio-Economic Levels. (Pennsylvania State University, 1971.) Dis. Abst. Int. 33A: 1509; Oct. 1972.

deWeffer, Rafaela del Carmen Elizondo. Effects of First Language Instruction in Academic and Psychological Development of Bilingual Children. (Illinois Institute of Technology, 1972.) Dis. Abst. Int. 33A: 5991-5992; May 1973.

Dezelle, Walter, Jr. A Comparative Study of the Changes in Personality in Academically Able Seventh-Grade Children Assigned or Not Assigned to an Accelerated Class in Mathematics Upon Entering Junior High School. (University of Houston, 1965.) Dis. Abst. 26: 4438-4439; Feb. 1966.

Dickerscheid, Harold. Curricular Implications of Mathematical Concepts of the Preschool Child. (Ohio State University, 1969.) Dis. Abst. Int. 30A: 4326-4327; Apr. 1970.

Diedrich, Richard Charles. The Effects of Studying Decimal and Non-Decimal Numeration Systems on Mathematical Understanding--Retention and Transfer. (Syracuse University, 1969.) Dis. Abst. Int. 30A: 3183-3184; Feb. 1970.

Dilley, Clyde Alan. A Comparison of Two Methods of Teaching Long Division. (University of Illinois at Urbana-Champaign, 1970.) Dis. Abst. Int. 31A: 2248; Nov. 1970.

Dilts, Robert Guy. Development and Application of a Cognitive Verb List to Facilitate Analysis of Mathematics Textbooks. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 4617-4618; Mar. 1971.

DiPaolo, Nunzio Vincent. An Analysis of Some Identifiable Effects of the Educational Program of the Forbes Trail Area Technical School. (Pennsylvania State University, 1965.) Dis. Abst. 27A: 654-655; Sept. 1966.

Dirr, Sister Pierre Marie. Intellectual Variables in Achievement in Modern Algebra. (Catholic University of America, 1966.) Dis. Abst. 27A: 2873-2874; Mar. 1967.

Dittmer, Karen Ann. Guidelines for Developing a Mathematics Laboratory. (University of Alabama, 1971.) Dis. Abst. Int. 32A: 5083-5084; Mar. 1972.

Divers, Benjamin Peyton, Jr. The Ability of Kindergarten and First Grade Children to Use the Transitive Property of Three Length Relations in Three Perceptual Situations. (University of Georgia, 1971.) Dis. Abst. Int. 32A: 3814; Jan. 1972.

Dixon, Lyle Junior. An Investigation of Ninth and Tenth Grade Texts and Commentaries of the School Mathematics Study Group for Indications of an Underlying Educational Philosophy. (University of Kansas, 1963.) Dis. Abst. 24: 5237; June 1964.

Doane, Bradford Sayles. The Effects of Homework and Locus of Control on Arithmetic Skills Achievement in Fourth Grade Students. (New York University, 1972.) Dis. Abst. Int. 33A: 5548; Apr. 1973.

Dobbs, Edith Lorraine. A Study of the Sequential Development of Time Sense and Chronology in the Elementary School. (University of Kansas, 1963.) *Dis. Abst.* 24: 5075; June 1964.

Dodson, Joseph Wesley. Characteristics of Successful Insightful Problem Solvers. (University of Georgia, 1970.) *Dis. Abst. Int.* 31A: 5928; May 1971.

Doggett, John Nelson. The Effect of the Ford Community School Program on the Achievement of Its Elementary Students. (St. Louis University, 1971.) *Dis. Abst. Int.* 32A: 4485; Feb. 1972.

Doherty, Joan. Level of Four Concepts of Probability Possessed by Children of Fourth, Fifth, and Sixth Grades Before Formal Instruction. (University of Missouri, 1965.) *Dis. Abst.* 27A: 1703; Dec. 1966.

Donahue, Robert T. An Investigation of the Factor Pattern Involved in Arithmetic Problem Solving of Eighth Grade Girls. (Catholic University of America, 1969.) *Dis. Abst. Int.* 30A: 2372; Dec. 1969.

Dorman, Lynn. Assertive Behavior and Cognitive Performance in Pre-School Children. (Boston University Graduate School, 1969.) *Dis. Abst. Int.* 30B: 2397-2398; Nov. 1969.

Dorminey, Ralph Jau Don. An Investigation of Interaction Between Selected Aptitudes and Two Methods of Presenting a Unit in Secondary School Mathematics. (University of Georgia, 1972.) *Dis. Abst. Int.* 33A: 3478; Jan. 1973.

Downs, William Alan. The Effect of Constructional Activities Upon Achievement in the Areas of Science and Mathematics at the Fifth Grade Level. (University of Missouri-Columbia, 1968.) *Dis. Abst.* 29A: 2542; Feb. 1969.

Drachenberg, Cecil. Nongraded Materials and Programming of Modern Mathematics for the Primary School. [with] *Modern Mathematics for the Primary School*, A Nongraded Mathematics Program for Grades K-3. (University of Houston, 1964.) *Dis. Abst.* 28A: 3358-3359; Mar. 1968.

Dreyfuss, Gerald Orange. A Study of a Special Educational Program for the Disadvantaged Student with a High Academic Potential. (University of Miami, 1968.) *Dis. Abst.* 29A: 3366; Apr. 1969.

Dull, Alyn Neil. The Construction and Standardization of a Test of Mathematical Understanding at the Sixth-Grade Level. (University of South Dakota, 1969.) *Dis. Abst. Int.* 30A: 4271; Apr. 1970.

Dunlap, William Phillip. A Comparison of the Effects of Diagnostics and Remedial Arithmetic Programs Upon the Achievement and Attitude Development of Fourth Grade Children. (University of Oregon, 1971.) Dis. Abst. Int. 32A: 2905-2906; Dec. 1971.

Dunson, Charles Kenneth. A Descriptive Analysis of the Mathematics Curriculum in the Predominantly Negro High Schools in the State of Georgia. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4138-4139; Apr. 1970.

Durall, Edwin Phillip. A Feasibility Study: Remediation by Computer Within a Computer-Managed Instruction Course in Junior High School Mathematics. (Florida State University, 1972.) Dis. Abst. Int. 33A: 2611-2612; Dec. 1972.

Durrance, Victor Rodney. The Effect of the Rotary Calculator on Arithmetic Achievement in Grades Six, Seven, and Eight. (George Peabody College for Teachers, 1964.) Dis. Abst. 25: 6307; May 1965.

Dweck, Carol Susan. The Role of Expectations and Attributions in the Alleviation of Learned Helplessness in a Problem-Solving Situation. (Yale University, 1972.) Dis. Abst. Int. 33B: 2317-2318; Nov. 1972.

Cyrli, Odvard Egil. An Investigation into the Development of Combinatorial Mechanisms Characteristic of Formal Reasoning, Through Experimental Problem Situations with Sixth-Grade Students. (Indiana University, 1967.) Dis. Abst. 28A: 4044; Apr. 1968.

Earle, Harold Fred. Student Attitudes Toward Geometry. (University of Maryland, 1972.) Dis. Abst. Int. 34A: 1059-1060; Sept. 1973.

Earle, Richard Allen. The Use of Vocabulary as a Structured Overview in Seventh Grade Mathematics. (Syracuse University, 1970.) Dis. Abst. Int. 31A: 5929; May 1971.

Early, Joseph Franklin. A Study of Children's Performance on Verbally Stated Arithmetic Problems With and Without Word Clues. (University of Alabama, 1967.) Dis. Abst. 28A: 2889; Feb. 1968.

Earnshaw, George Livingston. Open Education as a Humanistic Intervention Strategy. (Syracuse University, 1972.) Dis. Abst. Int. 34A: 1175; Sept. 1973.

Eastman, Phillip Murray. The Interaction of Spatial Visualization and General Reasoning Abilities with Instructional Treatment in Quadratic Inequalities: A Follow-Up Study. (University of Texas at Austin, 1972.) Dis. Abst. Int. 33A: 4933; Mar. 1973.

Ebeid, William Tawadros. An Experimental Study of the Scheduled Classroom Use of Student Self-Selected Materials in Teaching Junior High School Mathematics. (University of Michigan, 1964.) *Dis. Abst.* 25: 3427-3428; Dec. 1964.

Eberle, Betty Jobes. Mathematics Program for Gifted High School Students. A Participant Follow-Up, Summers 1964 Through 1969 at The Ohio State University. (Ohio State University, 1970.) *Dis. Abst. Int.* 31A: 4378-4379; Mar. 1971.

Eddleman, Virginia Kincaid. A Comparison of the Effectiveness of Two Methods of Class Organization for Arithmetic Instruction in Grade Five. (Northeast Louisiana University, 1971.) *Dis. Abst. Int.* 32A: 1744; Oct. 1971.

Edgell, John James, Jr. The Relation Between Cognitive Styles of Children and Their Cognitive Strategy in the Attainment of Selected Mathematical Concepts. (University of Texas at Austin, 1973.) *Dis. Abst. Int.* 34A: 2384; Nov. 1973.

Edwards, Andrew Soule. A Statistical Analysis of the Internal Properties of Three Elementary School Mathematics Tests. (University of Georgia, 1965.) *Dis. Abst.* 26: 6546; May 1966.

Egeland, Byron Ricker. The Relationship of Intelligence, Visual Motor Skills and Psycholinguistic Abilities with Achievement in the First Grade. (The University of Iowa, 1966.) *Dis. Abst.* 27A: 388; Aug. 1966.

Eggleston, Valeria Hirschler. Single-Array Conservation: A Study of Number Concepts of the Preoperational Child. (University of Oregon, 1972.) *Dis. Abst. Int.* 33B: 2318-2319; Nov. 1972.

Ehmer, Charles L. The Vocabulary of Contemporary Mathematics. (University of Pittsburgh, 1969.) *Dis. Abst. Int.* 30B: 5132-5133; May 1970.

Eigen, Lewis David. An Investigation of Some Variables Affecting the Use of Programmed Instruction in Mathematics Education. (Columbia University, 1964.) *Dis. Abst.* 25: 289; July 1964.

Eirich, Wayne Melvin. A Comparison of the Business Mathematics Achievement of Business Mathematics Students, Algebra Students, and General Mathematics Students. (Arizona State University, 1968.) *Dis. Abst.* 29A: 1036; Oct. 1968.

Eklin, Duane Elmer. The Influence of a Remedial Perceptual-Motor Activity Program on the Academic Performance of Retarded Junior High School Students. (University of Minnesota, 1973.) *Dis. Abst. Int.* 34A: 2366; Nov. 1973.

Ekman, Lincoln George. A Comparison of the Effectiveness of Different Approaches to the Teaching of Addition and Subtraction Algorithms in the Third Grade. (Volumes I and II). (University of Minnesota, 1966.) Dis. Abst. 27A: 2275-2276; Feb. 1967.

Elbrink, Larry Craig. The Life and Works of Dr. John August Swenson, Mathematics Educator, 1880-1944. (Ohio State University, 1969.) Dis. Abst. Int. 30A: 2722; Jan. 1970.

Eldredge, Garth Melvin. Expository and Discovery Learning in Programed Instruction. (University of Utah, 1965.) Dis. Abst. 26: 5863; Apr. 1966.

Elfner, Elinor Ann. The Effect of Learning Different Levels of Subordinate Skills on Performance of a Matrix Task. (Florida State University, 1971.) Dis. Abst. Int. 32A: 6191; May 1972.

Ellis, Dale Huband. An Analysis of Achievement Gains in Mathematics Classes Which Result from the Use of Student Tutors. (University of Utah, 1971.) Dis. Abst. Int. 32A: 1976-1977; Oct. 1971.

Ellis, Leslie Clyde. A Diagnostic Study of Whole Number Computations of Certain Elementary Students. (Louisiana State University and Agricultural and Mechanical College, 1972.) Dis. Abst. Int. 33A: 2234; Nov. 1972.

El-Naggar, Mohamed Abu-Khalil. A Comparative Study of Mathematics Programs in Egypt and the United States (Grades 7, 8, and 9). (Indiana University, 1965.) Dis. Abst. 27A: 326-327; Aug. 1966.

Emanuel, Jane McIntosh. The Intelligence, Achievement, and Progress Scores of Children Who Attended Summer Head Start Programs in 1967, 1968, and 1969. (University of Alabama, 1970.) Dis. Abst. Int. 31A: 5031-5032; Apr. 1971.

Embrey, James Edwin. A Study of the Effects of Mild Hearing Loss on Educational Achievement. (University of Tulsa, 1971.) Dis. Abst. Int. 32A: 3820; Jan. 1972.

Emmons, Coralie Ann. A Comparison of Selected Gross-Motor Activities of the Getman-Kane and the Kephart Perceptual-Motor Training Programs and Their Effects upon Certain Readiness Skills of First-Grade Negro Children. (The Ohio State University, 1968.) Dis. Abst. 29A: 3442; Apr. 1969.

Emrick, John Anthony. The Acuqisition and Transfer of Conservation Skills by Four Year Old Children. (University of California, Los Angeles, 1968.) Dis. Abst. 29A: 2561; Feb. 1969.

Engel, Charles William, Jr. The Development and Evaluation of Selected Automated Instructional Devices for Aiding Culturally-Deprived Students in Acquiring Basic Mathematical Skills. (Wayne State University, 1966.) Dis. Abst. 28A: 998-999; Sept. 1967.

Englert, Thomas James. A Comparative Study of the Effects on Achievement and Changes in Attitude of Senior High School Students Enrolled in First Year Algebra Under Two Different Teaching Approaches. (Cornell University, 1972.) Dis. Abst. Int. 33A: 1076-1077; Sept. 1972.

Entin, Elliot E. The Relationship Between the Theory of Achievement Motivation and Performance on a Simple and a Complex Task. (University of Michigan, 1968.) Dis. Abst. 29B: 1160-1161; Sept. 1968.

Eroh, Agnes Ruth. Development and Evaluation of a Structured Program Compared with an Unstructured Program for Measurement Experiences in Grade I. (Boston University School of Education, 1964.) Dis. Abst. 28A: 141; July 1967.

Esser, Barbara Feller. The Changing Relationship Between Verbal and Quantitative Aptitudes as Measured by the Scholastic Aptitude Test. (Rutgers, The State University, 1969.) Dis. Abst. Int. 30A: 3780-3781; Mar. 1970.

Esty, Edward Tuckerman, II. An Investigation of Children's Concepts of Certain Aspects of Topology. (Harvard University, 1970.) Dis. Abst. Int. 31A: 3773; Feb. 1971.

Etuk, Elizabeth Eme Samson. The Development of Number Concepts: An Examination of Piaget's Theory with Yoruba-Speaking Nigerian Children. (Columbia University, 1967.) Dis. Abst. 28A: 1295; Oct. 1967.

Eudy, Elaine Holland. The Effectiveness of a Mathematical Device Called a Tryab on the Arithmetic Achievement of Primary Students. (University of Mississippi, 1973.) Dis. Abst. Int. 34A: 1479-1480; Oct. 1973.

Evans, Edward William. Measuring the Ability of Students to Respond in Creative Mathematical Situations at the Late Elementary and Early Junior High School Level. (University of Michigan, 1964.) Dis. Abst. 25: 7108-7109; June 1965.

Evans, Robert Franklin. A Study of the Reliabilities of Four Arithmetic Attitude Scales and an Investigation of Component Mathematics Attitudes. (Case Western Reserve University, 1971.) Dis. Abst. Int. 32A: 3086; Dec. 1971.

Everett, Douglas Lavelle. The Effects of Tutoring on Achievement in and Attitude Toward Plane Geometry by Second Semester Tenth Grade Students. (University of Southern Mississippi, 1972.) *Dis. Abst. Int.* 33A: 1352; Oct. 1972.

Fairley, Willie D. The Effect of "Free Transfer" Versus "Zoned" Attendance on the Achievement of Ninth Grade Students in the Areas of Reading, Mathematics and Language Arts. (Mississippi State University, 1972.) *Dis. Abst. Int.* 33A: 3152; Jan. 1973.

Fairman, Billie Jack. The Effectiveness of a Structured Mathematics Program with Culturally Deprived Kindergarten Children. (North Texas State University, 1972.) *Dis. Abst. Int.* 33A: 3949; Feb. 1973.

Faist, Clara Rose. Achievement, Attitudes, and Resource Usage in a Mathematics Program in High School: Traditional Versus Flexible. (Northwestern University, 1972.) *Dis. Abst. Int.* 33A: 2813; Dec. 1972.

Fallon, Robert Ambrose. The Contingency Contracting Learning System: Its Effect Upon Elementary School Mathematics Achievement, Personal and Social Adjustment, and Attitude Toward School. (University of Minnesota, 1973.) *Dis. Abst. Int.* 34A: 2268-2269; Nov. 1973.

Farley, Sister Mary de Chantal. A Study of Mathematical Interests, Attitudes, and Achievements of Tenth and Eleventh Grade Students. (University of Michigan, 1968.) *Dis. Abst.* 29A: 3039-3040; Mar. 1969.

Farrell, Margaret Alice. Pattern Centering and Its Relation to Secondary School Geometry Teaching: The Formation of Hypotheses. (Indiana University, 1967.) *Dis. Abst.* 28A: 3552-3553; Mar. 1968.

Farris, Dan Curry. Toward a Theory of Sequencing: Study 1-2: An Exploration of Selected Relationships Among the Enactive, Iconic and Symbolic Modes of Representation. (Pennsylvania State University, 1970.) *Dis. Abst. Int.* 31A: 4618; Mar. 1971.

Fedon, John Peter. A Study of the Cuisenaire-Gattegno Method as Opposed to an Eclectic Approach for Promoting Growth in Operational Technique and Concept Maturity with First Grade Children. (Temple University, 1966.) *Dis. Abst.* 27A: 3771-3772; May 1967.

Fejfar, James Lawrence. Inductive Programming - The Exposition of a Theoretical Model, and a Description of the Development and Trial of an Exemplar Based on That Model. (University of Illinois, 1963.) *Dis. Abst.* 24: 3639-3640; Mar. 1964.

Feldman, Sarah Shirley Brown. Children's Understanding of a Negation as a Logical Operation in a Classification Task. (Stanford University, 1968.) Dis. Abst. 29B: 2616-2617; Jan. 1969.

Fennell, Francis Michael. The Effect of Diagnostic Mathematics Instruction on the Achievement and Attitude of Low Achieving Sixth Grade Pupils. (Pennsylvania State University, 1972.) Dis. Abst. Int. 33A: 3378; Jan. 1973.

Fennema, Elizabeth Hammer. A Study of the Relative Effectiveness of a Meaningful Concrete and a Meaningful Symbolic Model in Learning a Selected Mathematical Principle. (University of Wisconsin, 1969.) Dis. Abst. Int. 30A: 5338-5339; June 1970.

Fenner, Elmer David, Jr. An Investigation of the Concept of Underachievement. (Western Reserve University, 1965.) Dis. Abst. 27A: 600; Sept. 1966.

Ferderbar, Joseph E. Changes in Selected Student Attitudes and Personality Measures and Their Relationship to Achievement, Intelligence, and Rate When Using Programed Instruction. (University of Pittsburgh, 1963.) Dis. Abst. 25: 6310; May 1965.

Ferguson, Loree Humphrey. The Applicability of Specific Phonic Generalizations to Elementary Mathematics Textbooks. (University of Oklahoma, 1970.) Dis. Abst. Int. 31A: 2250; Nov. 1970.

Ferguson, Nelda Unterkircher. The Frostig - An Instrument for Predicting Total Academic Readiness and Reading and Arithmetical Achievement in First Grade. (University of Oklahoma, 1967.) Dis. Abst. 28A: 2090; Dec. 1967.

Ferguson, Richard Leroy. The Development, Implementation, and Evaluation of a Computer-Assisted Branched Test for a Program of Individually Prescribed Instruction. (University of Pittsburgh, 1969.) Dis. Abst. Int. 30A: 3856; Mar. 1970.

Fernandez, Patricia Peysar. A Presentation and Evaluation of an Individualized Instruction Course in First Year Algebra. (University of Utah, 1972.) Dis. Abst. Int. 33B: 1187; Sept. 1972.

Ferney, Gary Axel. An Evaluation of a Program for Learning in Accordance with Needs. (Washington State University, 1969.) Dis. Abst. Int. 30A: 4327; Apr. 1970.

Ferre, Alvin Victor. Effects of Repeated Performance Objectives Upon Student Achievement and Attitude. (New Mexico State University, 1972.) Dis. Abst. Int. 33A: 919; Sept. 1972.

Fetzer, Margaret Keenen. The Development of Syllogistic Reasoning. (University of Delaware, 1972.) Dis. Abst. Int. 33A: 1018; Sept. 1972.

Fiel, Ronald Lee. An Investigation of the Effectiveness of Formative Evaluation and Remediation in Achieving Mastery of Intellectual Skills. (Indiana University, 1972.) Dis. Abst. Int. 33A: 6057; May 1973.

Fielder, Robert Earl. The Comparative Effect of Two Years of Individually Prescribed Instruction on Student Achievement in Mathematics. (East Texas State University, 1971.) Dis. Abst. Int. 32A: 5103; Mar. 1972.

Finch, John Melvin. Teaching-Learning Units in PLAN: An Analysis of the Utilization of Instructional Materials to Individualize Learning by Computer-Managed Instruction. (University of Iowa, 1972.) Dis. Abst. Int. 33A: 1354; Oct. 1972.

Findley, Robert Earl. An Evaluation of the Effectiveness of a Textbook, Advanced General Math, Used by Ninth Grade General Mathematics Classes. (Colorado State College, 1966.) Dis. Abst. 27A: 2440-2441; Feb. 1967.

Finnell, Clyde Allen. A Laboratory Mathematics Approach: An Evaluation of Cognitive and Affective Learning in Ninth Grade Mathematics Classes in the United States Dependents Schools, European Area. (University of Southern California, 1972.) Dis. Abst. Int. 33A: 4053-4054; Feb. 1973.

Fischer, Erby Curtis. A Study of the Relationship Between Selected Personality Factors and Special Disabilities in Mathematics. (University of Alabama, 1967.) Dis. Abst. 28A: 2891-2892; Feb. 1968.

Fischer, Paul. The Relationship of Selected Variables to the Ability to Read and Interpret Maps. (University of Southern California, 1968.) Dis. Abst. 29A: 2034-2035; Jan. 1969.

Fishell, Kenneth Nelson. Utilization Patterns of Programmed Materials in the Junior High School. (University of Rochester, 1964.) Dis. Abst. 25: 2881-2882; Nov. 1964.

Fisher, Jack R. An Investigation of Three Approaches to the Teaching of Mathematics in the Elementary School. (University of Pittsburgh, 1967.) Dis. Abst. 28A: 4947-4948; June 1968.

Fisher, Merrill Edgar. A Comparative Study of Achievement in the Concepts of Fundamentals of Geometry Taught by Computer Managed Individualized Behavioral Objective Instructional Units Versus Lecture-Demonstration Methods of Instruction. (George Washington University, 1973.) Dis. Abst. Int. 34A: 2161; Nov. 1973.

Fisher, Victor Lee, Jr. The Relative Merits of Selected Aspects of Individualized Instruction in an Elementary School Mathematics Program. (Indiana University, 1966.) Dis. Abst. 27A: 3366; Apr. 1967.

Fishman, Joseph. Trends in Secondary School Mathematics in Relation to Educational Theories and Social Changes: 1893-1964. (New York University, 1965.) Dis. Abst. 27A: 990-991; Oct. 1966.

Flaherty, Eileen Gertrude. Cognitive Processes Used in Solving Mathematical Problems. (Boston University School of Education, 1973.) Dis. Abst. Int. 34A: 1767; Oct. 1973.

Fleckman, Bessie. Improvement of Learning Division Through Use of the Discovery Method. (University of Georgia, 1966.) Dis. Abst. 27A: 3366-3367; Apr. 1967.

Flynn, Richard Bernard. The Effect of Varied Intensities of Exertion and Levels of Aerobic Capacity on the Performance of Numerical Task. (Columbia University, 1970.) Dis. Abst. Int. 31A: 3318-3319; Jan. 1971.

Fogle, Richard Eugene. Differentiated Programed Learning of Fractions and Facets of Learning Aptitude of Third Graders. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 5610-5611; Apr. 1972.

Folk, Michael James. Influences of Developmental Level on a Child's Ability to Learn Concepts of Computer Programming. (Syracuse University, 1972.) Dis. Abst. Int. 34A: 1125; Sept. 1973.

Forhetz, John Elbert. An Investigation of Test Anxiety as Measured by the TASC in Content Areas Ranked Difficult and Easy with Fourth and Sixth Grade Students. (Southern Illinois University, 1970.) Dis. Abst. Int. 31A: 5124; Apr. 1971.

Fortson, Laura Rogers. A Creative-Aesthetic Approach to Readiness and Beginning Reading and Mathematics in the Kindergarten. (University of Georgia, 1969.) Dis. Abst. Int. 30A: 5339; June 1970.

Foster, Thomas Edward. The Effect of Computer Programming Experiences on Student Problem Solving Behaviors in Eighth Grade Mathematics. (University of Wisconsin, 1972.) Dis. Abst. Int. 33A: 4239-4240; Feb. 1973.

Foster, Thomas Robert. An Analysis of Teacher Behavior Under Announced and Unannounced Observation Conditions by the Supervisor. (University of Maryland, 1972.) Dis. Abst. Int. 33A: 1973-1974; Nov. 1972.

Foust, William Lee. Enrollment: A Curriculum Innovation Student Response Measure. (University of Oregon, 1969.) Dis. Abst. Int. 30A: 1465-1466; Oct. 1969.

Francies, Hallie Davis. Arithmetic Attitudes and Arithmetic Achievement of Fourth and Sixth Grade Students in Urban Poverty-Area Elementary Schools. (Case Western Reserve University, 1971.) Dis. Abst. Int. 32A: 1233; Sept. 1971.

Frank, Alan Raymond. A Study of Selected Variables in the Preparation of Seatwork for the Mentally Retarded. (University of Iowa, 1970.) Dis. Abst. Int. 31A: 4585; Mar. 1971.

Frase, Larry Eugene. A Comparison of Two Individualized Mathematics Programs on Student Independence, Achievement, Time, and Attitude Criterion Measures. (Arizona State University, 1971.) Dis. Abst. Int. 32A: 1978; Oct. 1971.

Frayer, Dorothy Ann. Effects of Number of Instances and Emphasis of Relevant Attribute Values on Mastery of Geometric Concepts by Fourth- and Sixth-Grade Children. (University of Wisconsin, 1969.) Dis. Abst. Int. 31A: 643; Aug. 1970.

Fredstrom, Paul Norman. An Evaluation of the Accelerated Mathematics Program in the Lincoln, Nebraska Public Schools. (University of Nebraska Teachers College, 1964.) Dis. Abst. 25: 5628-5629; Apr. 1965.

Frehner, Verl L. Cognitive Style as a Determinant of Educational Achievement Among Sixth Grade Elementary School Students. (Utah State University, 1972.) Dis. Abst. Int. 33A: 3379-3380; Jan. 1973.

Fremont, Herbert I. Individualized Instruction in Plane Geometry: A Comparison of the Relative Effectiveness of Learning Plane Geometry by an Individualized Approach as Contrasted with the Traditional Approach of Group Instruction. (New York University, 1963.) Dis. Abst. 24: 3227-3228; Jan. 1964.

Friebel, Allen Calhoun. A Comparative Study of Achievement and Understanding of Measurement Among Students Enrolled in Traditional and Modern School Mathematics Programs. (University of California, Berkeley, 1965.) Dis. Abst. 26: 903-904; Aug. 1965.

Frumess, Suzanne Crew. A Comparison of Management Groups Involving the Use of the Standard Behavior Chart and Setting Performance Aims. (University of Houston, 1973.) Dis. Abst. Int. 34A: 1733-1734; Oct. 1973.

Fuller, Susan Rudder. A Study of Problem Solving Methods of Students With and Without the Constraint of a Time Limit. (University of Georgia, 1971.) Dis. Abst. Int. 32A: 5611; Apr. 1972.

Fullwood, Harry Lee. A Follow-Up Study of Children Selected by the Frostig Developmental Test of Visual Perception in Relation to Their Success or Failure in Reading and Arithmetic at the End of Second Grade. (University of Oklahoma, 1968.) Dis. Abst. 29A: 2035; Jan. 1969.

Furgele, Frank James. An Investigation of Reported Problems and Attempted Solutions Which Confronted Selected School Systems in Pennsylvania Attempting to Improve Scope and Sequence in Grades 1-12 in the Language Arts, Mathematics, Science and Social Studies Areas. (Temple University, 1965.) Dis. Abst. 26: 5127-5128; Mar. 1966.

Futcher, Cyril Frederick Walter. An Analysis of Selected Elementary Arithmetic Texts Published in the U.S.A. During the Period 1877-1917. (University of Maryland, 1965.) Dis. Abst. 26: 5204; Mar. 1966.

Futcher, Wilfred George. Scoring for Partial Knowledge in Mathematics Testing; A Study of a Modification and an Extension of Multiple-Choice Items Applied to the Testing of Achievement in Mathematics. (University of Toronto, 1969.) Dis. Abst. Int. 31A: 1619-1620; Oct. 1970.

Gallagher, Harold B. A Study of Mobility of Pupils in Relation to Achievement, Grade 6. (Ball State Teachers College, 1965.) Dis. Abst. 26: 3107; Dec. 1965.

Gallian, Richard Donald. A Content Validation Study of the Arithmetic Test Items of Four Arithmetic Achievement Tests Compared with the Content of Six Arithmetic Series at the Intermediate Level. (University of Missouri, Columbia, 1967.) Dis. Abst. 28A: 3361-3362; Mar. 1968.

Gallick, Mary Catherine. Achievement of Fifth, Sixth, Ninth and Tenth Graders in Coordinate Geometry. (Michigan State University, 1970.) Dis. Abst. Int. 31A: 4035; Feb. 1971.

Gambini, Josephine Marie. Piaget's Theory: Conceptual Development and Affective Development in Diagnosed Emotionally Disturbed Public School Males. (Wayne State University, 1973.) Dis. Abst. Int. 34A: 3187-3188; Dec. 1973.

Gamble, Harry Thomas. A Study of Business Arithmetic Achievement in Selected Grades of 9 to 12. (Temple University, 1965.) Dis. Abst. 26: 4329-4330; Feb. 1966.

Gardiner, W. L. An Investigation of Understanding of the Meaning of the Logical Operators in Propositional Reasoning. (Cornell University, 1965.) Dis. Abst. 26: 6179-6180; Apr. 1966.

Gardner, Harvey F. A Comparison of the Modern and Traditional Mathematics Curriculums and Their Effects on Standardized Test Scores. (Southern Illinois University, 1969.) *Dis. Abst. Int.* 30A: 2847-2848; Jan. 1970.

Gardner, James Wise. A Study of the Effect of Pupil-Teacher Interaction on Student Achievement. (McNeese State University, 1973.) *Dis. Abst. Int.* 34A: 3234-3235; Dec. 1973.

Gardner, Thomas Paul. The Efficacy of Teacher Utilization of an Experimental Diagnostic Arithmetic Survey with Selected Educable Mentally Retarded Students. (University of Alabama, 1971.) *Dis. Abst. Int.* 32A: 5068; Mar. 1972.

Gargiulo, Raymond J. A Field Study to Effect Changes in Academic Achievement Levels of Underachieving Seventh-Grade Students. (University of New Mexico, 1970.) *Dis. Abst. Int.* 31A: 5931-5932; May 1971.

Garner, Jewell Lorain. The Construction and Administration of Two Objective Tests Designed to Assess Basic Arithmetical Understandings of Elementary School Pupils. (University of Texas, 1964.) *Dis. Abst.* 26: 1992-1993; Oct. 1965.

Gaskill, Edgar Allen. An Evaluation of Individually Prescribed Instruction in the Primary Grades of the Urbana Schools. (Illinois State University, 1970.) *Dis. Abst. Int.* 31A: 4416; Mar. 1971.

Gaskill, Lynn Dale. An Investigation of the Effects of Four Middle School Programs Upon Academic Achievement and Personal Adjustment of Eighth Grade Students. (North Texas State University, 1971.) *Dis. Abst. Int.* 32A: 3607; Jan. 1972.

Gaslin, William Lee. A Comparison of Achievement and Attitudes of Students Using Conventional or Calculator Based Algorithms for Operations on Positive Rational Numbers in Ninth Grade General Mathematics. (University of Minnesota, 1972.) *Dis. Abst. Int.* 33A: 2217; Nov. 1972.

Gates, James Oscar, Jr. A Survey of Time Allotment Practices in the Elementary School as Reported by Classroom Teachers in Thirty Public School Systems in Oklahoma. (The University of Oklahoma, 1968.) *Dis. Abst.* 29A: 2604; Feb. 1969.

Gatz, Margaret Jean. Graphic Representation of Solid Objects in Young Children. (Duke University, 1972.) *Dis. Abst. Int.* 33B: 5015; Apr. 1973.

Gau, Gerald Elmer. Toward a Theory of Sequencing: Study 1-6: An Exploration of the Effect of Instructional Sequences Involving Enactive and Iconic Embodiments on the Attainment of Concepts Embodied Symbolically. (Pennsylvania State University, 1972.) Dis. Abst. Int. 33A: 6728; June 1973.

Gaudia, Gil. Race, Social Class, and Age of Achievement of Conservation on Piaget's Tasks. (State University of New York at Buffalo, 1970.) Dis. Abst. Int. 31A: 5843-5844; May 1971.

Gawronski, Jane Donnelly. An Investigation of the Effect of Selected Learning Styles on Achievement in Eighth Grade Mathematics. (University of Minnesota, 1971.) Dis. Abst. Int. 32A: 3151-3152; Dec. 1971.

Gay, Lorraine Rumbel. Temporal Position of Reviews and Its Effect on the Retention of Mathematical Rules. (Florida State University, 1970.) Dis. Abst. Int. 32A: 237; July 1971.

Geisert, Paul George. A Study of the Hierarchical Competencies Underlying the Problem Solving Use of Proportion. (Florida State University, 1971.) Dis. Abst. Int. 32A: 5103-5104; Mar. 1972.

Gelman, Rochel Sandra. Conservation, Attention and Discrimination. (University of California, Los Angeles, 1967.) Dis. Abst. 28B: 2640; Dec. 1967.

Genkins, Elaine Frances. A Comparison of Two Methods of Teaching the Concept of Bilateral Symmetry to Young Children. (Columbia University, 1971.) Dis. Abst. Int. 32A: 1355-1356; Sept. 1971.

Geoghagan, James Landon. An Action Approach to Group Counseling: An Experimental Study. (University of Tennessee, 1970.) Dis. Abst. Int. 31A: 4458; Mar. 1971.

George, Linda Olsen. Selected Factors Which Affect Young Children's Concepts of Conservation of Length. (Indiana University, 1970.) Dis. Abst. Int. 31A: 2735; Dec. 1970.

Gerlach, Vernon Samuel. A Comparison of the Effects of Contingency and Non-Contingency Forms of Programed Instruction. (Arizona State University, 1963.) Dis. Abst. 25: 5733-5734; Apr. 1965.

Gerstein, Shayle Jay. Returnees at an Inner-City High School: A Comparison of Nonreturning Dropouts, Unsuccessful Returnees, Successful Returnees, and Stayins. (Illinois State University, 1971.) Dis. Abst. Int. 32A: 2342; Nov. 1971.

Gibish, Patricia Ann. A Description and Evaluation of the Second Year Implementation of a Systems Approach to Improving Mathematics Instruction. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 4619-4620; Mar. 1971.

Gilchrist, Mary Alice. Geographic Mobility and Reading and Arithmetic Achievement. (University of Colorado, 1968.) Dis. Abst. 29A: 497; Aug. 1968.

Gildemeister, Joan Ely. Two Sources of Complexity for Children's Complex Classification Performance. (University of Maryland, 1972.) Dis. Abst. Int. 33B: 3916-3917; Feb. 1973.

Ginther, John Lincoln. A Study of Definitions in High School Mathematics Textbooks. (University of Illinois, 1964.) Dis. Abst. 25: 4574; Feb. 1965.

Gipson, Joella Hardeman. Teaching Probability in the Elementary School: An Exploratory Study. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int., 32A: 4325-4326; Feb. 1972.

Girgus, Joan S. A Developmental Study of the Recognition of Sequentially Presented Forms. (New School for Social Research, 1969.) Dis. Abst. Int. 31B: 413; July 1970.

Glaser, Anton. History of Modern Numeration Systems. (Temple University, 1969.) Dis. Abst. Int. 31B: 1396-1397; Sept. 1970.

Glismann, Leonard W. The Effects of Special Arts and Crafts Activities on Attitudes, Attendance, Citizenship, and Academic Achievement of Slow Learning Ninth Grade Pupils. (Utah State University, 1967.) Dis. Abst. 29A: 1163; Oct. 1968.

Glissmeyer, Carl Howard. A Study of Academic Achievement of Sixth Graders in Self-Contained Elementary Schools and in Modified Departmentalized Intermediate Schools. (University of Utah, 1968.) Dis. Abst. 29A: 2475-2476; Feb. 1969.

Godde, John Arthur. A Comparison of Young Children in Achievement of General Skills, Adjustment, and Attitudes, in an Individual Progression Curriculum Organization, with Young Children in a Traditional Curriculum Organization. (Northern Illinois University, 1972.) Dis. Abst. Int. 34A: 2164; Nov. 1973.

Godgart, Martin David. The Arithmetic Problem-Solving Ability of Teachers as Related to Their Effectiveness in Teaching Problem-Solving. (University of Connecticut, 1964.) Dis. Abst. 26: 793-794; Aug. 1965.

Goebel, Laurence Gayheart. An Analysis of Teacher-Pupil Interaction When Programed Instructional Materials Are Used. (University of Maryland, 1966.) Dis. Abst. 27A: 982; Oct. 1966.

Goldberg, Robert. An Evaluation of Selected Aspects of a Tri-Semester Algebra Program. (New York University, 1971.) Dis. Abst. Int. 32A: 2400; Nov. 1971.

Goldner, Lawrence Ronald. A Study of the Effects of Compensatory Instruction in Language Arts and in Arithmetic on Achievement, Study Habits, and Selected Attitudes of Eighth Grade Students in a Depressed-Area School. (New York University, 1972.) Dis. Abst. Int. 33A: 1414-1415; Oct. 1972.

Golledge, Margaret Ruth. The Development of Piaget-Type Formal and Concrete Reasoning. (University of Iowa, 1966.) Dis. Abst. 27A: 673-674; Sept. 1966.

Goode, Paul. The Effect of Feedback of Intelligence Test Results Upon Achievement and Self-Estimates of Ability at the Sixth Grade Level. (Temple University, 1972.) Dis. Abst. Int. 33B: 1762-1763; Oct. 1972.

Gosciewski, Francis William. The Effect of Expectancy Reinforcement on Arithmetic Achievement, Self-Concept, and Peer-Group Status of Elementary School Children. (Kent State University, 1970.) Dis. Abst. Int. 31A: 2179-2180; Nov. 1970.

Gott, Margaret Ella. The Effect of Age Difference at Kindergarten Entrance on Achievement and Adjustment in Elementary School. (University of Colorado, 1963.) Dis. Abst. 24: 3640; Mar. 1964.

Gottlieb, Harold Joseph. Relation Between Stage Competence and Classificatory Performance. (Yeshiva University, 1972.) Dis. Abst. Int. 33B: 5490-5491; May 1973.

Gould, Dean Lyle. A Comparative Study of Two Plans for Utilization of Class Time in the Teaching of First-Year Algebra. (Northwestern University, 1970.) Dis. Abst. Int. 31A: 3164-3165; Jan. 1971.

Grafft, William Davis. Cognitive Outcomes of the S.M.S.G. Mathematics Program in Grades Four, Five, and Six. (University of California, 1966.) Dis. Abst. 27A: 992; Oct. 1966.

Graham, Glenn Thomas. Sequentially Scaled Mathematics Achievement Tests: Construction Methodology and Evaluation Procedures. (University of Pittsburgh, 1966.) Dis. Abst. 27A: 3308; Apr. 1967.

Gran, Eldon Edward. A Study to Determine Whether the Negative-Number Subtraction Method Can Be Learned and Used by Elementary Pupils. (University of South Dakota, 1966.) Dis. Abst. 27A: 4165-4166; June 1967.

Grant, Eugene Edward. An Experimental Study of the Effects of Compulsory Arithmetic Homework Assignments on the Arithmetic Achievement of Fifth-Grade Pupils. (University of the Pacific, 1971.) Dis. Abst. Int. 32A: 2401; Nov. 1971.

Gravel, Hector. Teaching Mathematical Relations at the Grade-Six Level. (Columbia University, 1968.) Dis. Abst. 29A: 1473; Nov. 1968.

Gray, Carol Ann. Factors in Students' Decisions to Attempt Academic Tasks. (University of Washington, 1971.) Dis. Abst. Int. 32B: 3031; Nov. 1971.

Gray, Roland Francis. An Experimental Study of Introductory Multiplication. (University of California-Berkeley, 1964.) Dis. Abst. 25: 6432; May 1965.

Gray, Theresa Marie. A Field Study of Mathematics Laboratory Development in Youngstown, Ohio. (University of Pittsburgh, 1973.) Dis. Abst. Int. 34B: 1184-1185; Sept. 1973.

Gray, William Lee. The Effects of an Integrated Learning Sequence on the Acquisition and Retention of Mathematics and Science Behaviors in Grade Five. (University of Maryland, 1970.) Dis. Abst. Int. 31A: 2004; Nov. 1970.

Greathouse, Jimmie Joe. An Experimental Investigation of Relative Effectiveness Among Three Different Arithmetic Teaching Methods. (University of New Mexico, 1965.) Dis. Abst. 26: 5913; Apr. 1966.

Greatsinger, Calvin. An Experimental Study of Programed Instruction in Division of Fractions. (Colorado State College, 1966.) Dis. Abst. 27A: 2442; Feb. 1967.

Green, Geraldine Ann. A Comparison of Two Approaches, Area and Finding a Part of, and Two Instructional Materials, Diagrams and Manipulative Aids, on Multiplication of Fractional Numbers in Grade Five. (University of Michigan, 1969.) Dis. Abst. Int. 31A: 676-677; Aug. 1970.

Green, Joseph Walter. The Effect of Reteaching Mathematics on Different Cognitive Levels. (Stanford University, 1972.) Dis. Abst. Int. 33A: 2236; Nov. 1972.

Green, Robert Wesley. A Survey of the Mathematical Instructional Materials Used in Teaching Culturally Disadvantaged Children Grades 1 Through 6 Throughout the United States. (Indiana University, 1969.) *Dis. Abst. Int.* 31A: 1101; Sept. 1970.

Greenberg, Judith Widoff. Visual Perceptual Abilities of Young Children in Synthesis and Analysis Tasks. (Columbia University, 1969.) *Dis. Abst. Int.* 30A: 4273-4274; Apr. 1970.

Greenes, Carole Ellen Zeiger. Preferences for Certain Attributes in Plane Geometric Figures. (Boston University School of Education, 1970.) *Dis. Abst. Int.* 31B: 2820-2821; Nov. 1970.

Greenwood, Charles Reed. Effects of Elementary Aged, Peer, Behavior Managers on Small Group, Written, Academic Response Rates. (University of Utah, 1972.) *Dis. Abst. Int.* 33A: 3381; Jan. 1973.

Greenwood, Edward George. Some Relationships Between Developmental Reading Instruction in Grade Eight and Subsequent Academic Improvement. (St. Louis University, 1972.) *Dis. Abst. Int.* 33A: 923; Sept. 1972.

Greer, Rachel Dean. The Effects of a Program of Total Body Movement Upon the Educable Mentally Retarded Child's Ability to Understand Selected Geometric Forms. (Northwestern State University of Louisiana, 1972.) *Dis. Abst. Int.* 33A: 605-606; Aug. 1972.

Gregory, John William. The Impact of the Verbal Environment in Mathematics Classrooms on Seventh Grade Students' Logical Abilities. (Ohio State University, 1972.) *Dis. Abst. Int.* 33A: 1585; Oct. 1972.

Gridley, John David, Jr. An Empirical Investigation of the Construct of Mathematics Achievement in the Elementary Grades Based on the Method of Homogeneous Keying. (Fordham University, 1971.) *Dis. Abst. Int.* 32A: 1914; Oct. 1971.

Griffiths, Robert H., Jr. The Effect of Irrelevant Redundancy and Information Regarding the Rule for Solution on Oddity Problem Learning in Young Children. (University of Cincinnati, 1970.) *Dis. Abst. Int.* 31B: 6289-6290; Apr. 1971.

Groen, Guy Joseph. An Investigation of Some Counting Algorithms for Simple Addition Problems. (Stanford University, 1967.) *Dis. Abst.* 28A: 4478-4479; May 1968.

Grooms, Henrietta Hill. Pupil Achievement and Social Development in Intermediate Grade Departmental and Self-Contained Classrooms. (University of Georgia, 1967.) *Dis. Abst.* 28A: 4374-4375; May 1968.

Grouws, Douglas Arthur. Differential Performance of Third-Grade Children in Solving Open Sentences of Four Types. (University of Wisconsin, 1971.) Dis. Abst. Int. 32A: 3860; Jan. 1972.

Gruen, Gerald Elmer. Experiences Affecting the Development of Number Conservation in Children. (University of Illinois, 1964.) Dis. Abst. 25: 6751-6752; May 1965.

Grumbling, Betty Lou Nowlin. An Experimental Study of the Effectiveness of Instruction in Mental Computation in Grade IV. (University of Northern Colorado, 1970.) Dis. Abst. Int. 31A: 3775-3776; Feb. 1971.

Gryde, Stanley Kermit. A Paradigm for the Application of the Audio-Tutorial System in Construction to the Secondary School. (University of Southern California, 1971.) Dis. Abst. Int. 32A: 3136; Dec. 1971.

Guarnaccia, Vincent Joseph. Pupil-Tutoring in Elementary Arithmetic Instruction. (Columbia University, 1970.) Dis. Abst. Int. 33B: 3283-3284; Jan. 1973.

Gubrud, Allan Roy. The Effect of an Advance Organizer and a Concrete Experience on Learning the Concept of Vectors in Junior and Senior High School. (Cornell University, 1970.) Dis. Abst. Int. 31A: 6468-6469; June 1971.

Guerriero, Carl Albert, III. Team Learning and Aptitude-Treatment Interaction in Seventh Grade Mathematics. (Pennsylvania State University, 1971.) Dis. Abst. Int. 32A: 6198-6199; May 1972.

Gulick, Glenn Russell. The Effects of a Token Reinforcement System Upon Educable Mentally Retarded Children's Academic Achievement in Arithmetic. (University of Tulsa, 1972.) Dis. Abst. Int. 33A: 4207; Feb. 1973.

Gumm, Robert Duane. An Analysis and Development of a Computer Science Program for Use in Secondary School Mathematics. (Oklahoma State University, 1969.) Dis. Abst. Int. 31A: 3899; Feb. 1971.

Gupta, Ram Krishna. Interactions of Achievement Test Items in the Context of Repeated Measurements of Groups, Using Different Mathematics Texts. (University of Minnesota, 1967.) Dis. Abst. 28A: 2093-2094; Dec. 1967.

Gururaja, Sreelakshmi. The Development of Number Concepts in Children. (University of Saskatchewan, 1969.) Dis. Abst. Int. 31B: 5023; Feb. 1971.

Gussett, James Clayton. The Employment of Non-Standard English in the Development of a Mathematics Course for Seventh-Grade Disadvantaged Students. (University of Cincinnati, 1971.) *Dis. Abst. Int.* 32A: 275; July 1971.

Guy, Donald Eugene. A Developmental Study of Performing Requiring a Conceptual Rule Shift. (University of Colorado, 1967.) *Dis. Abst.* 29B: 755-756; Aug. 1968.

Haenisch, Siegfried. A Study of the Place of Logic in an Elementary Algebra Course. (Rutgers, The State University, 1967.) *Dis. Abst.* 28A: 1731; Nov. 1967.

Hagele, Lowell Clarke. An Analysis of Cognitive Behavior Observed in Selected Fourth-, Sixth-, and Eighth-Grade Pupils on a Unit in Mathematics. (University of Northern Colorado, 1973.) *Dis. Abst. Int.* 34A: 2388; Nov. 1973.

Haile, James Benjamin, Sr. A Study and Analysis of the Relationships Between Selected Intelligence Factors, Selected Achievement Factors, and Academic Achievement Grades of a Selected Group of Developmentally and Functionally Retarded Junior-High-School Age Children. (American University, 1973.) *Dis. Abst. Int.* 34A: 3189; Dec. 1973.

Hake, Caron T. The Effects of Specified Written Comments on Achievement in and Attitude Toward Algebra and Geometry. (Pennsylvania State University, 1973.) *Dis. Abst. Int.* 34A: 1700; Oct. 1973.

Hale, Jack. A Study of the Relationships Between Selected Factors of Organizational Climate and Pupil Achievement in Reading, Arithmetic, and Language. (University of Alabama, 1965.) *Dis. Abst.* 26: 5817; Apr. 1966.

Hale, William Thomas. The Development and Evaluation of Text Materials Covering Topics from Formal Logic as Related to the Teaching of High School Mathematics. (University of Illinois, 1964.) *Dis. Abst.* 25: 4477; Feb. 1965.

Hall, Cynthia Tuttle. Determining Some Validities of the Test of Quantitative Judgment (Form T). (University of Massachusetts, 1970.) *Dis. Abst. Int.* 31A: 4382; Mar. 1971.

Hall, Donald Eugene. The Ability of Intermediate Grade Children to Deal with Aspects of Quantitative Judgment. (Boston University School of Education, 1966.) *Dis. Abst.* 27A: 2730; Mar. 1967.

Hall, E. Leona. Methods and Materials of a Mathematics Program for the Disadvantaged and Underachieving Child. (Michigan State University, 1966.) *Dis. Abst.* 28A: 154-155; July 1967.

Hall, Kenneth Dwight. An Experimental Study of Two Methods of Instruction for Mastering Multiplication Facts at the Third-Grade Level. (Duke University, 1967.) Dis. Abst. 28A: 390-391; Aug. 1967.

Hall, Lucien Talmage, Jr. The Prediction of Success in Each of Six Four-Year Selections of Secondary Mathematics Courses. (University of Virginia, 1969.) Dis. Abst. Int. 30A: 4141-4142; Apr. 1970.

Hall, Wayne Hawkins. The Effect on Performance of Number of Exercises, Feedback, and Amount of Detail. (George Peabody College for Teachers, 1970.) Dis. Abst. Int. 31B: 4839-4840; Feb. 1971.

Ham, Anna Lois Sackett. An Investigation of Piagetian Conservation Abilities in Young Children. (Northeast Louisiana University, 1971.) Dis. Abst. Int. 32A: 1915-1916; Oct. 1971.

Hamby, Kelly Dean. A Model for Modifying Individualized Instruction. (University of Texas at Austin, 1971.) Dis. Abst. Int. 33A: 142; July 1972.

Hamilton, Brett Basil. Control of the Conservation Response Through Discrimination Learning Set Training for Conserving and Nonconserving Transformations. (University of California, Los Angeles, 1973.) Dis. Abst. Int. 34A: 1701; Oct. 1973.

Hammond, Ruth Kartchner. A Predictive Study of Mathematical Readiness and Achievement: A Longitudinal Study from First Grade Entrance Through Third Grade. (Purdue University, 1972.) Dis. Abst. Int. 33A: 637; Aug. 1972.

Hammons, Donald Wayne. Student Achievement in Selected Areas of Arithmetic During Transition from Traditional to Modern Mathematics (1960-1969). (Louisiana State University and Agricultural and Mechanical College, 1972.) Dis. Abst. Int. 33A: 2237; Nov. 1972.

Hamner, Brent. A Study of Strategies Used in Teaching Geometry in the Public Secondary Schools of Alabama. (University of Alabama, 1970.) Dis. Abst. Int. 31A: 5267-5268; Apr. 1971.

Hampton, Charles Edgar. The Relationship of Religious Attitudes to Certain Aspects of Mathematics Learning. (University of Texas at Austin, 1970.) Dis. Abst. Int. 31B: 4197-4198; Jan. 1971.

Hampton, Homer F. A Comparative Study of Selected Factors of Mathematics Achievement in Homogeneous Groups of Fifth Grade Pupils Using Discovery. (Oklahoma State University, 1967.) Dis. Abst. 28A: 4934; June 1968.

Hand, Charles Reginald. A Comparison of Permanent Pupils and Transient Military Pupils in Grades Four, Five, and Six in Relation to Mathematical Mastery. (Boston University School of Education, 1967.) *Dis. Abst. Int.* 30A: 207-208; July 1969.

Haney, Joanne Deloris Hager. A Comparison of Socioeconomic Status, Verbal Ability and Grade Level in the Performance of Piagetian Tasks. (West Virginia University, 1970.) *Dis. Abst. Int.* 31A: 3955; Feb. 1971.

Hankins, Ben Albert. The Effect of a Controlled Classroom Environment on Student Performance. (University of Tennessee, 1971.) *Dis. Abst. Int.* 32A: 2343-2344; Nov. 1971.

Hankins, Donald David, Jr. A Fourth Grade Mathematics Program for Children from Impoverished Areas and Its Effect Upon Learning. (United States International University, 1969.) *Dis. Abst. Int.* 30A: 2249; Dec. 1969.

Hanna, Gerald Stanley. An Investigation of Selected Ability, Aptitude, Interest, and Personality Characteristics Relevant to Success in High School Geometry. (University of Southern California, 1965.) *Dis. Abst.* 26: 3152-3153; Dec. 1965.

Hanna, Joe Edwin. The Determination of the Steps That Should Be Taken in the Initiation and Development of a Modern Mathematics Curriculum in the Omaha Public Schools. (University of Nebraska Teachers College, 1965.) *Dis. Abst.* 26: 5785-5786; Apr. 1966.

Hanneman, James Howard. An Experimental Comparison of Independent Study and Conventional Group Instruction in Tenth Grade Geometry. (University of Florida, 1971.) *Dis. Abst. Int.* 32A: 6289; May 1972.

Hanninen, Kenneth Arnold. The Effect of Texture on Tactually Perceived Length in Children. (University of Minnesota, 1968.) *Dis. Abst. Int.* 30A: 169; July 1969.

Hansen, Burdette Peter. A Study of the Effects of Room Temperature on Learning. (The University of Iowa, 1966.) *Dis. Abst.* 27A: 353-354; Aug. 1966.

Hansen, Roger L. The Effects of Social, Symbolic and Material Reinforcers on the Metropolitan Test Performance of Normal Primary II Pupils. (University of Northern Colorado, 1971.) *Dis. Abst. Int.* 32A: 3787; Jan. 1972.

Hanson, Lawrence Eugene. Inductive Discovery Learning, Reception Learning, and Formal Verbalization of Mathematical Concepts. (Florida State University, 1967.) *Dis. Abst.* 28A: 1731-1732; Nov. 1967.

Hanson, Robert Bryant. The Prediction of Achievement in High School Plane Geometry by Spatial Orientation-Visualization-Visual Perception Ability. (University of Maryland, 1971.) Dis. Abst. Int. 32A: 6003; May 1972.

Hantjis, Anthony William. A Study of Business Arithmetic Errors in Relationship to Selected Student Factors. (Temple University, 1969.) Dis. Abst. Int. 31A: 1158-1159; Sept. 1970.

Harbeck, Sister Carol Ann. Experimental Study of the Effect of Two Proof Formats in High School Geometry on Critical Thinking and Selected Student Attitudes. (Ohio State University, 1972.) Dis. Abst. Int. 33A: 4243; Feb. 1973.

Harder, Richard Earl. A Methodological Comparison of Interview and Behavioral Techniques for Assessment of Conservation of Length. (University of North Dakota, 1971.) Dis. Abst. Int. 33B: 462; July 1972.

Harding, Robert Neil. The Objectives of Mathematics Education in Secondary Schools as Perceived by Various Concerned Groups. (University of Nebraska, 1968.) Dis. Abst. 29A: 4375-4376; June 1969.

Harmon, Adelaide T. Problem Solving in Contemporary Mathematics: The Relative Merits of Two Methods of Teaching Problem Solving in the Elementary School. (New York University, 1969.) Dis. Abst. Int. 30B: 3748; Feb. 1970.

Harper, Kenneth John. A Comparison of Three Elementary Mathematics Programs: A Model for Curriculum Evaluation. (Wayne State University, 1972.) Dis. Abst. Int. 33A: 6059-6060; May 1973.

Harper, Randolph Thomas. The Influence of Selected Aspects of Cognitive and Affective Development Upon Preferences for Delayed Versus Immediate Gratification. (Ohio State University, 1968.) Dis. Abst. Int. 30B: 381; July 1969.

Harris, Gary Reeves. A Study of the Academic Achievement of Selected Negro and White Fifth-Grade Pupils When Educational Ability is Held Constant. (University of North Carolina at Chapel Hill, 1967.) Dis. Abst. 28A: 4375-4376; May 1968.

Harris, Jasper William. An Analysis of the Effects of Using Quizzes and Modified Teaching Procedures to Increase the Unit Test Scores in Geometry, Algebra, and French Classes in an Inner City Senior High School. (University of Kansas, 1972.) Dis. Abst. Int. 33A: 2648; Dec. 1972.

Harris, Virgil William, III. Effects of Peer Tutoring, Homework, and Consequences Upon the Academic Performance of Elementary School Children. (University of Kansas, 1972.) Dis. Abst. Int. 33A: 6175; May 1973.

Harrison, Morris Glenn. A Study to Determine the Effectiveness of Student Tutors in Promoting Achievement Gain with Slow-Learning Students in Related Math I. (Texas Technological College, 1968.) Dis. Abst. 29A: 3324-3325; Apr. 1969.

Harte, Sister Mary Laboure. Anxiety and Defensiveness as Related to Measurable Intelligence and Scholastic Achievement of Selected Institutionalized Children. (Fordham University, 1966.) Dis. Abst. 27A: 2884; Mar. 1967.

Hartlein, Marion Louise. Construction and Evaluation of a Test to Measure Elementary Mathematical Understandings. (University of Maryland, 1965.) Dis. Abst. 26: 5915-5916; Apr. 1966.

Harvin, Virginia Raines. Analysis of the Uses of Instructional Materials by a Selected Group of Teachers of Elementary School Mathematics. (Indiana University, 1964.) Dis. Abst. 25: 4561; Feb. 1965.

Hatch, Ronald LaVern. A Comparison of Slow Learners of Low and Middle Socioeconomic Status on Academic Achievement, Self Concepts, and Intelligence Test Scores. (Syracuse University, 1970.) Dis. Abst. Int. 31A: 2761; Dec. 1970.

Hater, Sister Mary Ann. The Cloze Procedure as a Measure of the Reading Comprehensibility and Difficulty of Mathematical English. (Purdue University, 1969.) Dis. Abst. Int. 30A: 4829; May 1970.

Hatfield, Larry Lee. Computer-Assisted Mathematics: An Investigation of the Effectiveness of the Computer Used as a Tool to Learn Mathematics. (University of Minnesota, 1969.) Dis. Abst. Int. 30A: 4329-4330; Apr. 1970.

Hatz, Van Richard. A Treatise on the Possibility of Teaching Philosophy Through "New" Mathematics on the Secondary Level. (University of Mississippi, 1965.) Dis. Abst. 26: 5290; Mar. 1966.

Hausher, Howard Leonard. A Comparison of Mathematics Programs Followed by Students Tested in England and in the United States. (University of Virginia, 1969.) Dis. Abst. Int. 31A: 65-66; July 1970.

Haven, Elizabeth Wright. Selected Community, School, Teacher, and Personal Factors Associated with Girls Electing to Take Advanced Academic Mathematics Courses in High School. (University of Pennsylvania, 1971.) Dis. Abst. Int. 32A: 1747; Oct. 1971.

Hawkinson, Lawrence Drew. The Contributions to the Secondary Mathematics Curriculum of Three Schools in the Philosophy of Mathematics. (Stanford University, 1967.) Dis. Abst. 28A: 4529-4530; May 1968.

Hawthorne, Robert R. Curricular Provisions in Iowa High Schools from 1954 to 1964. (University of Iowa, 1966.) Dis. Abst. 27A: 1200-1201; Nov. 1966.

Hayes, Edward John. Relationships Between Self-Concept of Arithmetic Ability and Arithmetic Achievement in a Selected Group of Sixth Grade Students. (Michigan State University, 1967.) Dis. Abst. 28A: 3999; Apr. 1968.

Haynes, Jerry Oscar. Cuisenaire Rods and the Teaching of Multiplication to Third-Grade Children. (Florida State University, 1963.) Dis. Abst. 24: 4545; May 1964.

Heatherly, Anna L. Attainment of Piagetian Conservation Tasks in Relation to the Ability to Form Hypotheses as to the Probable Content of Story Material Among First and Second Grade Children. (University of Virginia, 1972.) Dis. Abst. Int. 33A: 663; Aug. 1972.

Hegedus, Rita Anne. An Application of Overt and Nonovert Correction Responses, and Sequencing to Mathematical Learning Tasks. (Lehigh University, 1971.) Dis. Abst. Int. 32A: 5047; Mar. 1972.

Heger, Louis Frederick. A Comparative Study of Pupil Achievement Under Different Organization Plans for Seventh Grades. (University of Nebraska Teachers College, 1963.) Dis. Abst. 25: 3933-3934; Jan. 1965.

Hegstrom, William J. Construction and Clinical Testing of Programmed Instructional Units for Very Low Achievers in Junior High School Mathematics. (University of Miami, 1971.) Dis. Abst. Int. 32A: 3663-3664; Jan. 1972.

Heighton, Ernest Lloyd. The Use of Tautologies in High School Mathematics. (University of Virginia, 1972.) Dis. Abst. Int. 33A: 3156; Jan. 1973.

Heiman, Marcia Bernice. Individualized Instruction in the Classroom. (University of Michigan, 1970.) Dis. Abst. Int. 31A: 3956; Feb. 1971.

Heimgartner, Norman Louis. Selected Mathematical Abilities of Beginning Kindergarten Children. (Colorado State College, 1968.) Dis. Abst. 29A: 406-407; Aug. 1968.

Heine, Beatrice. An Investigation of the Effect of Teaching Selected Topics in Elementary Mathematical Logic on Problem-Solving Ability of Fifth-Grade Students. (Temple University, 1972.) Dis. Abst. Int. 33A: 1587; Oct. 1972.

Henney, Maribeth Ann. The Relative Impact of Mathematics Reading Skills Instruction and Supervised Study Upon Fourth Graders' Ability to Solve Verbal Problems in Mathematics. (Kent State University, 1968.) Dis. Abst. 29A: 4377; June 1969.

Henry, Donald Earl. Attentional and Cardinal-Ordinal Factors in the Conservation of Number. (University of Minnesota, 1971.) Dis. Abst. Int. 32B: 6618-6619; May 1972.

Herbst, Leonard Alfred. The Effect of Teaching Coordinate Geometry on the Understandings of Selected Geographic Concepts in the Fifth Grade. (University of California, Berkeley, 1967.) Dis. Abst. 28A: 2599-2600; Jan. 1968.

Herceg, John. A Study of the Coordinator's Role in the Introduction of Formally Presented Objectives and Individualized Learning Rates in Computer Assisted Mathematics. (University of Pittsburgh, 1972.) Dis. Abst. Int. 33A: 4059; Feb. 1973.

Herman, Maureen Lewis. Patterning Before Mathematics in Kindergarten: The Effect of a Patterning Treatment on the Children's Ability to Learn Number Concepts Later in the Year. (Columbia University, 1972.) Dis. Abst. Int. 33A: 4060; Feb. 1973.

Hermeier, Raymond Kenneth. Age and Intelligence as Related to the Concepts of Mass and Volume Conservation. (The University of Iowa, 1967.) Dis. Abst. 28A: 2556-]557; Jan. 1968.

Herriot, Sarah Florence Tribble. The Secondary School "Slow-Learner" in Mathematics. (Stanford University, 1967.) Dis. Abst. 28A: 3072-3073; Feb. 1968.

Hershberger, Lotus Dean. A Comparison of Two Methods of Teaching Selected Topics in Plane and Solid Analytic Geometry. (Florida State University, 1970.) Dis. Abst. Int. 31A: 4622-4623; Mar. 1971.

Hervey, Margaret Anne. Second Grade Children's Responses to Two Types of Multiplication Problems. (University of Wisconsin, 1965.) Dis. Abst. 27A: 602-603; Sept. 1966.

Hiatt, Arthur Allen. Assessing Mathematical Thinking Abilities of Sixth, Ninth, and Twelfth Grade Students. (University of California, Berkeley, 1970.) Dis. Abst. Int. 31B: 7427-7428; June 1971.

Hicks, John Simpson. Introversion and Extraversion and Their Relationship to Academic Achievement Among Emotionally Disturbed Children. (Columbia University, 1968.) Dis. Abst. 29A: 3462; Apr. 1969.

Higdon, Gene Harold. A Comparative Study of the Achievement in Mathematics of Sixth Grade Students According to Type of School Organizational Pattern and Selected Teacher Variables. (McNeese State University, 1973.) Dis. Abst. Int. 34A: 2918; Dec. 1973.

Higginbotham, John McKee. Advanced Placement Procedures in Mathematics in American High Schools. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 497; Aug. 1972.

Higgins, James Edward. The Effects of Non-Decimal Numeration Instruction on Mathematical Understanding. (Indiana University, 1970.) *Dis. Abst. Int.* 31A: 2791-2792; Dec. 1970.

Higgins, Jon Lyle. The Development and Evaluation of Mathematics Curriculum Materials for Use in a Junior High School Physical Science Program. (University of Texas, 1967.) *Dis. Abst.* 28A: 1620; Nov. 1967.

Hildebrand, Francis Howard. An Approach to Teaching Mathematical Induction to Adolescent Boys. (Michigan State University, 1968.) *Dis. Abst.* 29A: 497; Aug. 1968.

Hill, Jerry Glynn Matthews. A Comparative Study of Academic Achievement of Intermediate Level Students in an Open Concept School and a Conventional School. (McNeese State University, 1973.) *Dis. Abst. Int.* 34A: 2918-2919; Dec. 1973.

Hill, Warren Henry. The Effect of Set Theory Instruction Upon the Ability of Children to Recognize Conclusive and Inconclusive Inferences in Sentential Logic. (George Peabody College for Teachers, 1970.) *Dis. Abst. Int.* 31B: 5024-5025; Feb. 1971.

Hillerby, Robert Webster. Teaching First Grade Math to Spanish-Speaking Students. (University of California, Los Angeles, 1970.) *Dis. Abst. Int.* 31A: 3167; Jan. 1971.

Hilliard, Everett Leslie. A Comparative Study of the Cognitive Development of Disadvantaged First Grade Pupils as Measured by Selected Piagetian Tasks. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 1416; Oct. 1972.

Hillman, Thomas Peter. A Study of Three Response Modes Using Two Programmed Mathematics Textbooks. (University of Michigan, 1963.) *Dis. Abst.* 25: 1045; Aug. 1964.

Hinds, Richard Henry. Accomplishment of a Learning Task for Two Levels of Test Anxiety and Two Degrees of Learner Sequence Control. (University of Miami, 1972.) *Dis. Abst. Int.* 33A: 2693-2694; Dec. 1972.

Hipwood, Stanley James. Pupil Growth as a Function of Teacher Flexibility, Student Independence, and Student Conformance. (University of New Mexico, 1968.) *Dis. Abst. Int.* 30A: 169-170; July 1969.

Hirsch, Christian Richard, Jr. An Experimental Study Comparing the Effects of Guided Discovery and Individualized Instruction on Initial Learning, Transfer, and Retention of Mathematical Concepts and Generalizations. (University of Iowa, 1972.) *Dis. Abst. Int.* 33B: 3194-3195; Jan. 1973.

Hirschbuhl, John Joseph. Toward a Theory of Sequencing: Study 1-5: An Exploration of Selected Transitivity and Conjunctive Relationships Among the Enactive, Iconic and Symbolic Modes of Representation. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 6202; May 1972.

Hirschi, Melvin Edward. A Study of Mathematical Achievement in an Intermediate Grade of the Lewiston School District. (University of Idaho, 1971.) *Dis. Abst. Int.* 32A: 2953; Dec. 1971.

Hoban, Michael James. Transformation Geometry in the Junior High School: An Evaluation of a Curricular Unit in the Seventh Grade. (Columbia University, 1970.) *Dis. Abst. Int.* 31B: 5482-5483; Mar. 1971.

Hodges, John Raymond. A Study of the Ability of a Group of Eighth Grade Students to Learn and Use Certain Mathematical Concepts. (George Peabody College for Teachers, 1963.) *Dis. Abst.* 24: 5430; June 1964.

Hoeltke, Gary Martin. Effectiveness of Special Class Placement for Educable Mentally Retarded Children. (University of Nebraska Teachers College, 1966.) *Dis. Abst.* 27A: 3311; Apr. 1967.

Hoffman, Irwin J. Effect of Computer Application on Generalization Skills and Achievement in a Second Year Algebra Course. (University of Denver, 1971.) *Dis. Abst. Int.* 32B: 2856-2857; Nov. 1971.

Hoffman, Nathan. Geometry in Mathematics: A Survey of Some Recent Proposals for the Content of Secondary School Geometry. (University of Montana, 1973.) *Dis. Abst. Int.* 34A: 3026; Dec. 1973.

Holcombe, Bill Morgan. A Study of the Relationship Between Student Mobility and Achievement. (University of South Carolina, 1969.) *Dis. Abst. Int.* 30A: 2253-2254; Dec. 1969.

Hollander, Elaine Kind. The Effects of Various Incentives on Fifth and Sixth Grade Inner-City Children's Performance of an Arithmetic Task. (American University, 1968.) *Dis. Abst.* 29A: 1130; Oct. 1968.

Hollingshead, Irving, Jr. Number Theory in the Twelfth Grade Mathematics Program. (Rutgers University, 1965.) Dis. Abst. 27A: 414; Aug. 1966.

Hollis, Loye Yvorne. A Study to Compare the Effects of Teaching First Grade Mathematics by the Cuisenaire-Gattegno Method with the Traditional Method. (Texas Technical College, 1964.) Dis. Abst. 26: 905-906; Aug. 1965.

Holloway, Regina Hempler. The Effect of Special In-Service Training for Teachers of the Educationally Disadvantaged on Pupil Attitudes and Achievement. (University of Tulsa, 1969.) Dis. Abst. Int. 30A: 1335; Oct. 1969.

Holly, Keith Allen. Structure-of-Intellect Factor Abilities and a Self-Concept Measure in Mathematics Relative to Performance in High School Modern Algebra. (University of Southern California, 1971.) Dis. Abst. Int. 32A: 2484; Nov. 1971.

Holmes, Allen Harold. Teaching the Logic of Statistical Analysis by the Monte Carlo Approach. (University of Illinois, 1968.) Dis. Abst. Int. 30A: 209; July 1969.

Holmes, Paul Roger. The Influence of Anxiety Upon Academic Performance Under Varying Conditions of Task Orientation and Evaluation. (George Peabody College for Teachers, 1966.) Dis. Abst. 27B: 2120-2121; Dec. 1966.

Holste, Donald Ernest. The Effect of Different Prescriptions Used by Teachers in an IPI Mathematics Program. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 33A: 552; Aug. 1972.

Holz, Alan W. A Technique for Studying Presentation Variables in Mathematics Text. (Purdue University, 1972.) Dis. Abst. Int. 33A: 4677; Mar. 1973.

Hooper, Frank H. Piaget's Conservation Tasks: The Logical and Developmental Priority of Identity Conservation. (Wayne State University, 1967.) Dis. Abst. Int. 31B: 6936-6937; May 1971.

Hoover, Gail Louise. Learning to Learn Mathematics Independently: A Study at the Fourth Grade Level. (Syracuse University, 1969.) Dis. Abst. Int. 31A: 293; July 1970.

Hopkins, Charles David. An Experiment on Use of Arithmetic Time in the Fifth Grade. (Indiana University, 1965.) Dis. Abst. 26: 5291-5292; Mar. 1966.

Hopkins, Layne Victor. Toward a Theory of Sequencing: Study 3-2: An Exploration of Transitivities Formulated from a Set of Piagetian-Derived Operations and Their Implications in Traversing Learning Hierarchies. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 6203; May 1972.

Horn, Billy Dean. A Study of Mathematics Achievement of Selected Sixth Grade Pupils in the Public Schools of Topeka. (University of Kansas, 1969.) *Dis. Abst. Int.* 30A: 2254; Dec. 1969.

Horne, Edgar Byron. A Comparative Study of College Preparatory Mathematics Curricula in Canada in 1964-65. (University of Illinois, 1966.) *Dis. Abst.* 27A: 2098-2099; Jan. 1967.

Hosey, Harold Roy. Cognitive and Affective Growth of Elementary School Students Who Participated in Summer Head Start. (Oklahoma State University, 1972.) *Dis. Abst. Int.* 33A: 6591-6592; June 1973.

Hostetler, Robert Paul. Toward a Theory of Sequencing: Study 2-1: An Exploration of the Effect of Selected Sequence Variables Upon Student Choice in the Use of Algorithms. (Pennsylvania State University, 1970.) *Dis. Abst. Int.* 31A: 4623; Mar. 1971.

Houde, Richard A. The Effectiveness of Positive and Negative Instances on the Attainment of the Geometric Concept of "Similarity" by Sixth Grade Students at Two Intelligence Levels. (University of Tennessee, 1972.) *Dis. Abst. Int.* 33A: 3955; Feb. 1973.

House, Peggy A. The Learning Environment as a Predictor of the Academic Self-Concepts of Ninth Grade Mathematics Students. (Kansas State University, 1973.) *Dis. Abst. Int.* 34A: 2460; Nov. 1973.

Houston, Thomas Andrew. The Relationship of Attitude and Achievement Scores to Sex, Intelligence, and Grade Level of a Selected Group of Junior High School Pupils. (Wayne State University, 1968.) *Dis. Abst.* 29A: 3325; Apr. 1969.

Howard, Francis Hawthorne. National Curriculum Reform Influence on Virginia Public High School Course Offerings. (University of Virginia, 1968.) *Dis. Abst.* 29A: 3913-3914; May 1969.

Howard, Vivian Gordon. Teaching Mathematics to the Culturally Deprived and Academically Retarded Rural Child. (University of Virginia, 1969.) *Dis. Abst. Int.* 31A: 294-295; July 1970.

Howell, Edgar N. Recognition of Selected Inference Patterns by Secondary School Mathematics Students. (University of Wisconsin, 1965.) *Dis. Abst.* 26: 5292; Mar. 1966.

Howell, William Lawrence, III. The Correlates of Change in School Integration with the Academic Achievement of Eighth Grade Students. (University of South Carolina, 1971.) Dis. Abst. Int. 32B: 7292; June 1972.

Howitz, Thomas Allen. The Discovery Approach: A Study of Its Relative Effectiveness in Mathematics. (University of Minnesota, 1965.) Dis. Abst. 26: 7178-7179; June 1966.

Hrabi, James Stanley. An Experimental Study of a Unit on Logic and Proof Strategy in the Grades Seven and Nine Mathematics Curriculum. (University of Colorado, 1967.) Dis. Abst. 28A: 3528; Mar. 1968.

Hubert, Lawrence James. A Formal Model for the Perceptual Processing of Geometric Configurations. (Stanford University, 1971.) Dis. Abst. Int. 32A: 788-789; Aug. 1971.

Hudson, James Alfred. A Pilot Study of the Influence of Homework in Seventh Grade Mathematics and Attitudes Toward Homework in the Fayetteville Public Schools. (University of Arkansas, 1965.) Dis. Abst. 26: 906; Aug. 1965.

Hughes, Eugene Morgan. The Impact of Selected Experimental Curriculum Projects on Commercially Published Elementary School Mathematics Textbooks. (George Peabody College for Teachers, 1968.) Dis. Abst. 29B: 2115-2116; Dec. 1968.

Hughes, Fergus Peter. A Developmental Investigation of the Cognitive Components Necessary for Euclidean Spatial Functioning in the Child. (Syracuse University, 1972.) Dis. Abst. Int. 34B: 1257; Sept. 1973.

Hughes, Frank George. A Comparison of Two Methods of Teaching Multidigit Multiplication. (University of Tennessee, 1973.) Dis. Abst. Int. 34A: 2460-2461; Nov. 1973.

Hungerman, Ann Dorothy. A Study of the Achievement and Attitude of Sixth-Grade Pupils in Conventional and Contemporary Mathematics Programs. (University of Michigan, 1965.) Dis. Abst. 27A: 414-415; Aug. 1966.

Hunkler, Richard Fredric. Achievement of Sixth-Grade Pupils in Modern Mathematics as Related to Their Teachers' Mathematics Preparation. (Texas A & M University, 1968.) Dis. Abst. 29A: 3897-3898; May 1969.

Hunte, Beryl Eleanor. Demonstrative Geometry During the Twentieth Century: An Account of the Various Sequences Used in the Subject Matter of Demonstrative Geometry from 1900 to the Present Time. (New York University, 1965.) Dis. Abst. 26: 3979; Jan. 1966.

Hurst, Doyle. The Relationship Between Certain Teacher Related Variables and Student Achievement in Third Grade Arithmetic. (Oklahoma State University, 1967.) Dis. Abst. 28A: 4935-4936; June 1968.

Hutcheson, James Winston. A Comparison of the Effectiveness of a Laboratory-CAI-Discussion Strategy and a Laboratory-Discussion Strategy in the Teaching of Mathematics. (Auburn University, 1973.) Dis. Abst. Int. 34A: 2271; Nov. 1973.

Hutchings, Lloyd Benjamin. An Examination, Across a Wide Range of Socioeconomic Circumstance, of a Format for Field Research of Experimental Numerical Computation Algorithms, an Instrument for Measuring Computational Power Under Any Concise Numerical Addition Algorithm, and the Differential Effects of Short Term Instruction in Two Experimental Numerical Addition Algorithms and Equivalent Practice with the Conventional Addition Algorithm. (Syracuse University, 1972.) Dis. Abst. Int. 33A: 4678; Mar. 1973.

Hutton, Jerry Bob. Relationships Between Preschool Screening Test Data and First Grade Academic Performance for Head Start Children. (University of Houston, 1970.) Dis. Abst. Int. 31B: 395; July 1970.

Hynes, Michael C. An Analysis of the Instructional Time Necessary for a Network of Behavioral Objectives for K-9 Mathematics Utilizing Program Evaluation and Review Technique. (Kent State University, 1971.) Dis. Abst. Int. 32A: 2305; Nov. 1971.

Ibe, Milagros Dimal. The Effects of Using Estimation in Learning a Unit of Sixth Grade Mathematics. (University of Toronto (Canada), 1971.) Dis. Abst. Int. 33A: 5036; Mar. 1973.

Igo, Robert Vincent. Using Risk Taking Behavior to Assign Students to Instructional Treatments in a Computer-Assisted Instruction Program. (Pennsylvania State University, 1971.) Dis. Abst. Int. 33A: 1022; Sept. 1972.

Ikeda, Hiroshi. A Factorial Study of the Relationships Between Teacher-Held Objectives and Student Performance in UICSM High School Mathematics. (University of Illinois, 1965.) Dis. Abst. 26: 2588; Nov. 1965.

Ilika, Joseph. Age of Entrance Into First Grade as Related to Scholastic Achievement. (University of Michigan, 1963.) Dis. Abst. 24: 2737; Jan. 1964.

Impara, James Clement. An Experimental Comparison of Matrix Sampling and Examinee Sampling for Estimating Test Norms for Different Target Groups on Different Types of Tests. (Florida State University, 1972.) Dis. Abst. Int. 33A: 4942; Mar. 1973.

Ingle, Henry Thomas. An Attitude-Change Study on Children's Perceptions of the Computer as an Expert Source of Information. (Stanford University, 1973.) Dis. Abst. Int. 33A: 6592; June 1973.

Isaac, Herbert Leopold. The Effectiveness of an Open Interval Approach to the Limit Concept for a 12th Year Mathematics Course. (Columbia University, 1967.) Dis. Abst. Int. 31B: 286; July 1970.

Isenberg, Robert Leon. A Comparison of Achievement Scores in Reading, Arithmetic, and Motor Skill Development Among Three Instructional Programs with Different Levels of Supportive Services for Elementary School Compensatory Education Students. (Brigham Young University, 1972.) Dis. Abst. Int. 33A: 2765; Dec. 1972.

Jacks, William Rolland. Attitudes, Preferences and Perceptions of Gifted Sixth and Eighth Grade Students. (University of Southern California, 1971.) Dis. Abst. Int. 32A: 4450-4451; Feb. 1972.

Jackson, Adam. Teaching Analytical Trigonometry Via Transformations: A Comparison with the Wrapping Function Approach. (Florida State University, 1972.) Dis. Abst. Int. 33A: 3258-3259; Jan. 1973.

Jackson, Robert Loring. Numeration Systems: An Experimental Study of Achievement on Selected Objectives of Mathematics Education Resulting from the Study of Different Numeration Systems. (University of Minnesota, 1965.) Dis. Abst. 26: 5292-5293; Mar. 1966.

Jacobs, Claire C. The Set Theoretic Concept of Partition in School Mathematics. (Rutgers University, The State University of New Jersey, 1970.) Dis. Abst. Int. 31A: 1139; Sept. 1970.

Jacobsen, Edward Carl. Recommendations for the Implementation of a Modern Mathematics Program in Botswana. (University of Kansas, 1969.) Dis. Abst. Int. 30A: 2419-2420; Dec. 1969.

Jahn, Harvey Raymond. The Development of Soviet Educational Policy During 1917-1936: A Case Study of Mathematics Education at the Elementary and Secondary Levels. (University of Michigan, 1968.) Dis. Abst. Int. 30A: 148; July 1969.

James, Jim Butler. A Comparison of Performance of Sixth-Grade Children in Three Arithmetic Tasks: Typical Textbook Verbal Problems; Revised Verbal Problems Including Irrelevant Data; and Computational Exercises. (University of Alabama, 1967.) Dis. Abst. 28B: 2030; Nov. 1967.

Jamshaid, Mohammad. A Study of the Forces That Have Influenced Change in Secondary School Mathematics (Grades 7-12) in the United States Since World War II and the Possible Implications for Pakistan. (Indiana University, 1968.) Dis. Abst. 29A: 2890; Mar. 1969.

Janda, George Dale. A Three Year Evaluation of a Plan for Reducing Failure in the Primary Grades of Selected Public Schools. (University of Tulsa, 1972.) Dis. Abst. Int. 33A: 1045; Sept. 1972.

Jansson, Lars Crispin. The Development of an Instrument to Assess Critical Thinking Ability in Mathematics. (Temple University, 1970.) Dis. Abst. Int. 32A: 1383; Sept. 1971.

Jantz, Richard Kieth. The Identification of Local Pupil Performance Norms in Reading and Arithmetic for Sixth Grade Pupils Which May Be Used as a Component of an Accountability Model for a Local School System. (Ball State University, 1972.) Dis. Abst. Int. 33A: 2617; Dec. 1972.

Jay, Winifred Tom. Sex Stereotyping in Selected Mathematics Textbooks for Grades Two, Four and Six. (University of Oregon, 1973.) Dis. Abst. Int. 34A: 3028; Dec. 1973.

Jeffrey, Jay McLeish. Preference for Two Styles of Mathematics Instruction. (Case Western Reserve University, 1972.) Dis. Abst. Int. 33A: 1589; Oct. 1972.

Jencks, Stanley Morris. The Construction and Validation of Geoboard Investigations, a Programmed Approach to Laboratory Materials in Elementary Mathematics. (University of Utah, 1968.) Dis. Abst. 29B: 2975; Feb. 1969.

Jenkins, Offa Lou Harris. A Study of the Effect of Three Methods of Teaching Arithmetic to Mentally Handicapped Pupils. (University of Virginia, 1967.) Dis. Abst. 28A: 3074; Feb. 1968.

Jennings, Thomas Edward. Self-Correctable Errors in the Educational Diagnosis of the Skills--A Multiple Regression Analysis. (University of North Carolina at Chapel Hill, 1971.) Dis. Abst. Int. 32A: 2350; Nov. 1971.

Jensen, Linda Rae. The Relationships Among Mathematical Creativity, Numerical Aptitude and Mathematical Achievement. (University of Texas at Austin, 1973.) Dis. Abst. Int. 34A: 2168-2169; Nov. 1973.

Jerman, Max Edward. Problem Solving in Arithmetic as Transfer from a Productive Thinking Program. (Stanford University, 1971.) Dis. Abst. Int. 32A: 5671; Apr. 1972.

Jhin, Kyo Ryoon. A Statistical Comparison of the Effectiveness of Non-Tutorial Computer-Aided Instruction and Conventional Teaching of Algebra. (Auburn University, 1971.) *Dis. Abst. Int.* 32B: 5734; Apr. 1972.

Johanson, Emma Jane Dixon. A Ninth Grade Piagetian Mathematics Curriculum. (University of Toledo, 1972.) *Dis. Abst. Int.* 33A: 223; July 1972.

Johnson, Alonzo Franklin. SMSG Geometry as a Real Vector Space. (Oklahoma State University, 1967.) *Dis. Abst.* 28A: 4936; June 1968.

Johnson, Dale Arthur. A Study to Determine the Prediction of Success in Algebra and Geometry Based Upon Reading, Mathematics and Intelligence Scores from Standardized Tests. (Brigham Young University, 1972.) *Dis. Abst. Int.* 33A: 2074; Nov. 1972.

Johnson, David Carl. An Investigation in the Learning of Selected Parts of a Boolean Algebra by Five- and Six-Year-Old Children. (University of Georgia, 1971.) *Dis. Abst. Int.* 32A: 5060; Mar. 1972.

Johnson, David Carlton. Programed Learning: A Comparison of the School Mathematics Study Group Programed and Conventional Textbooks in Elementary Algebra. (University of Minnesota, 1965.) *Dis. Abst.* 26: 5294; Mar. 1966.

Johnson, Gerald Singleton. The Interrelationships of Cognitive and Affective Variables in a Sample of Educationally Handicapped Pupils in Three Types of Class Placement and in Three Age Groups. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 3385-3386; Jan. 1973.

Johnson, Geraldine Meador. An Unprecedented Innovation for Dropout Prevention Through Guaranteed Performance Contracting and Accountability at Texarkana, U.S.A. 1969-70. (East Texas State University, 1971.) Dis. Abst. Int. 32A: 5502-5503; Apr. 1972.

Johnson, Gordon Floyd. An Investigation of Programed Procedures in Teaching Addition and Subtraction to Educable Mentally Retarded Subjects. (University of Oregon, 1966.) *Dis. Abst.* 27A: 4132; June 1967.

Johnson, Herbert Norman. The Relationship of a Supplemental Unit in Logic to Certain Aspects of the Mathematics Education of Sixth Grade Students. (University of Oregon, 1971.) *Dis. Abst. Int.* 32A: 3005; Dec. 1971.

Johnson, Howard Cornelius. The Effects of Advance Organizers on the Child's Egocentric Thinking and Centration in Learning Selected Mathematical Concepts. (Northwestern University, 1973.) Dis. Abst. Int. 34B: 2778-2779; Dec. 1973.

Johnson, Louise Henrietta. Elementary School Geometry: A Study of Achievement on Selected Objectives of Geometry of Mexican American and Anglo American Second Grade Children. (University of Northern Colorado, 1971.) Dis. Abst. Int. 32A: 3814-3815; Jan. 1972.

Johnson, Martin Leroy. Effects of Selected Experiences on the Classification and Seriation Abilities of Young Children. (University of Georgia, 1971.) Dis. Abst. Int. 32A: 4922-4923; Mar. 1972.

Johnson, Randall Erland. The Effect of Activity Oriented Lessons on the Achievement and Attitudes of Seventh Grade Students in Mathematics. (University of Minnesota, 1970.) Dis. Abst. Int. 32A: 305; July 1971.

Johnson, Robert Lee. The Effect of Teaching Algebra on the Maintenance and Development of Arithmetic Skills. (Lehigh University, 1970.) Dis. Abst. Int. 31A: 5079-5080; Apr. 1971.

Johnson, Robert Leo. Effects of Varying Concrete Activities on Achievement of Objectives in Perimeter, Area, and Volume by Students of Grades Four, Five, and Six. (University of Colorado, 1970.) Dis. Abst. Int. 31A: 4624; Mar. 1971.

Johnson, Roger Thornten, Jr. A Comparison of Categorizing Ability in High and Low Socioeconomic Kindergarteners. (University of California, Berkeley, 1969.) Dis. Abst. Int. 31A: 225; July 1970.

Johnson, Russell Marion. A Comparison of Gifted Adolescents from High and Low Socioeconomic Backgrounds on School Achievement and Personality Traits. (University of Denver, 1966.) Dis. Abst. 27A: 3226-3227; Apr. 1967.

Johnson, Sonia Ann Harris. Some Selected Classroom Variables and Their Relationship to Mathematics Achievement in Central Minnesota and the Greater London Area. (Rutgers, The State University, 1966.) Dis. Abst. 27A: 139-140; July 1966.

Johnson, Theola Gae. Influence of Selected Factors on the Ability of Fourth, Fifth, and Sixth Graders to Read Graphs. (University of Southern California, 1971.) Dis. Abst. Int. 32A: 726; Aug. 1971.

Johnston, Arden Eugene. Audio-Tutorial Versus Traditional Instruction in Seventh Grade Mathematics in the Boone Junior High Schools. (Iowa State University, 1969.) *Dis. Abst. Int.* 30A: 954; Sept. 1969.

Johnston, Betty Barker Kendall. An Analysis of the Mathematical Vocabulary of Four- and Five-Year-Old Children. (University of California, Los Angeles, 1964.) *Dis. Abst.* 25: 3433-3434; Dec. 1964.

Johnston, Herbert James. The Effect of Grouping Patterns on First-Grade Children's Academic Achievement and Personal and Social Development. (University of Miami, 1973.) *Dis. Abst. Int.* 34A: 2461; Nov. 1973.

Johnston, Hiram Drexel. Suggested Mathematics Enrichment Topics for High School Seniors. (Oklahoma State University, 1970.) *Dis. Abst. Int.* 31B: 6750-6751; May 1971.

Jones, Bobby. A Comparison of Teachers' and Students' Perceptions of Learning Opportunities Provided in Elementary School Classrooms. (University of Georgia, 1973.) *Dis. Abst. Int.* 34A: 3028-3029; Dec. 1973.

Jones, Douglas Jerry. A Study of Variables Related to the Achievement of Underachieving Boys in an Open Education Environment. (Duke University, 1972.) *Dis. Abst. Int.* 33A: 2617-2618; Dec. 1972.

Jones, Joline Nan Johnson. Effects of Three Conditions of Perceptual Cues on Performance of Transitivity Tasks. (Syracuse University, 1968.) *Dis. Abst.* 29B: 4367; May 1969.

Jones, June Vreeland. A Predictive Assessment of Overt Classroom Behavior and the Academic Achievement of Mentally Retarded Students. (University of Oregon, 1971.) *Dis. Abst. Int.* 32A: 5070-5071; Mar. 1972.

Jones, Robert Sommerville. The Influence of Tactile-Kinesthetic Experience on Perceptual-Motor Behavior in Disadvantaged Preschool Children. (University of South Carolina, 1971.) *Dis. Abst. Int.* 32A: 671-672; Aug. 1971.

Jones, Rowen Cox. A Diagnostic-Manipulative Instructional Program for Teaching Addition and Subtraction to Six Emotionally Disturbed Children: A Case Study Approach. (University of Oregon, 1971.) *Dis. Abst. Int.* 32A: 5071; Mar. 1972.

Jonsson, Harold Alfred. Interaction of Test Anxiety and Test Difficulty in Mathematics Problem-Solving Performance. (University of California, Berkeley, 1965.) *Dis. Abst.* 26: 3757-3758; Jan. 1966.

Jordan, Ralph James. Effects of Sequence of Presentation of Square Root Extraction Methods. (University of Rochester, 1970.) *Dis. Abst. Int.* 31A: 3416; Jan. 1971.

Jorgensen, Paul Sejr. A Study of Secondary Mathematics Education in Denmark with Related Implications for Modern Secondary Mathematics Education in the United States. (University of Wisconsin, 1968.) *Dis. Abst.* 29A: 409-410; Aug. 1968.

Joseph, Dorris George. The Effects of a Specially Planned Mathematics Program on Pupil Achievement in Eighth Grade Mathematics. (Louisiana State University, 1963.) *Dis. Abst.* 24: 5084; June 1964.

Julian, Arthur Francis Quarry. A Comparative Study of Scores Measuring Achievement of Goals of the Cognitive Domain Between a Newly Devised Elementary Geometry Test and Some Commonly Administered Standardized Tests of the Elementary School. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 4838-4839; Mar. 1972.

Juliar, Helen Holt. An Analysis of Pupil Behavior and School Marks. (University of Minnesota, 1968.) *Dis. Abst. Int.* 30A: 63; July 1969.

Jurick, Robert Rudolph. Computer-Oriented Instructional System for Teaching Analytic Geometry. (Ohio State University, 1972.) *Dis. Abst. Int.* 33B: 1667-1668; Oct. 1972.

Kamara, Allieu Ibrahim. Cognitive Development Among School Age Themne Children of Sierra Leone. (University of Illinois at Urbana-Champaign, 1971.) *Dis. Abst. Int.* 32A: 4422; Feb. 1972.

Kamins, Martin P. An Exploratory Study of the Effect of Familiar Language on the Ability of Black Children to Achieve Success with the Solving of Word Problems. (Wayne State University, 1971.) *Dis. Abst. Int.* 32A: 2402; Nov. 1971.

Kaminsky, Mildred. A Study of the Status of Conservation Ability in Relationship to Arithmetic Achievement. (Wayne State University, 1970.) *Dis. Abst. Int.* 31A: 3341; Jan. 1971.

Kamps, Kenneth George. An Investigation of Portions of a Model for Acquisition of Conservation and Measurement of Length Based on Performance of Selected Second Grade Children on Six Piaget-Type Tasks. (University of Iowa, 1970.) *Dis. Abst. Int.* 31A: 4550; Mar. 1971.

Kanes, Lelage G. A Comparison of Two Teaching Strategies Used to Present a Unit in Elementary Mathematics Using Computer-Assisted Instruction. (University of Pennsylvania, 1971.) *Dis. Abst. Int.* 32A: 1981; Oct. 1971.

Kannegieter, Ruthann Brinkerhoff. The Effects of a Learning Program in Perceptual-Motor Activity upon the Visual Perception of Shape. (Stanford University, 1968.) Dis. Abst. 29A: 2121; Jan. 1969.

Kansky, Robert James. An Analysis of Models Used in Australia, Canada, Europe, and the United States to Provide an Understanding of Addition and Multiplication Over the Natural Numbers. (University of Illinois, 1969.) Dis. Abst. Int. 30A: 1074-1075; Sept. 1969.

Kaplan, Jerome David. Teaching Number Conservation to Disadvantaged Children. (Columbia University, 1967.) Dis. Abst. 28B: 3492-3493; Feb. 1968.

Karlin, Marvin William. The Development and Utilization of a Card Game for Teaching Prime Factorization in the Fifth Grade. (University of Colorado, 1971.) Dis. Abst. Int. 33A: 80; July 1972.

Katz, Saul M. A Comparison of the Effects of Two Computer Augmented Methods of Instruction with Traditional Methods Upon Achievement of Algebra Two Students in a Comprehensive High School. (Temple University, 1971.) Dis. Abst. Int. 32A: 1188-1189; Sept. 1971.

Kaufman, Roger Alexander. An Experimental Evaluation of Operating Characteristics of an Intrinsic Program on Powers and Exponents of Numbers. (New York University, 1964.) Dis. Abst. 25: 1007-1008; Aug. 1964.

Kaufmann, Jerome E. The Essentials of a Deductive System in Elementary Algebra: An Analysis of Textbooks and the Opinions of Mathematics Educators. (University of Virginia, 1968.) Dis. Abst. 29A: 2607-2608; Feb. 1969.

Kavett, Phyllis Flyer. A Study of the Teaching of Non-Decimal Systems of Numeration in the Elementary School. (Rutgers, The State University, 1969.) Dis. Abst. Int. 30A: 1468; Oct. 1969.

Kazim, Maassouma Mohamed. Basic Assumptions for a Secondary School Mathematic Program. (University of Kansas, 1964.) Dis. Abst. 26: 223-224; July 1965.

Keane, Daniel Ford. Relationships Among Teacher Attitude, Student Attitude, and Student Achievement in Elementary School Arithmetic. (University of Florida, 1968.) Dis. Abst. Int. 30A: 64-65; July 1969.

Keane, Dorothy Louise. An Exploration and Analysis of the Nuffield Mathematics Teaching Project with Reference to Its Current Use in Selected British Schools. (Wayne State University, 1973.) Dis. Abst. Int. 34A: 3029; Dec. 1973.

Keating, Barbara Jean. A Study of the Effect of a Reading Improvement Program on Achievement in Reading and Arithmetic in Grades Four, Five, and Six. (University of Kansas, 1967.) Dis. Abst. 28A: 4379-4380; May 1968.

Keese, Earl Eugene. A Study of the Creative Thinking Ability and Student Achievement in Mathematics Using Discovery and Expository Methods of Teaching. (George Peabody College for Teachers, 1972.) Dis. Abst. Int. 33A: 1589-1590; Oct. 1972.

Keil, Gloria Emilie. Writing and Solving Original Problems as a Means of Improving Verbal Arithmetic Problem Solving. (Indiana University, 1964.) Dis. Abst. 25: 7109-7110; June 1965.

Kenny, David A. The Measurement and Explanation of Population Effects: Sex Differences in Mathematics and Science in a Longitudinal Study. (Northwestern University, 1972.) Dis. Abst. Int. 33B: 4999; Apr. 1973.

Kepner, Henry Sieber, Jr. An Empirical Investigation of Retroactive Effects on the Retention of Meaningful Mathematical Material. (University of Iowa, 1970.) Dis. Abst. Int. 31A: 4550-4551; Mar. 1971.

Kern, Donald. A Comparison of Strategies for Sequencing Mathematics Materials. (University of Georgia, 1973.) Dis. Abst. Int. 34A: 3031; Dec. 1973.

Kessinger, Peter Remington. The Use of Student Generated Descriptions in the Identification of Mathematical Talent. (University of Arizona, 1971.) Dis. Abst. Int. 31A: 6280; June 1971.

Kester, Scott Woodrow. The Communication of Teacher Expectations and Their Effects on the Achievement and Attitudes of Secondary School Pupils. (University of Oklahoma, 1969.) Dis. Abst. Int. 30A: 1434-1435; Oct. 1969.

Kew, Priscilla Foster. Embeddedness-Disembeddedness and School Achievement. (New York University, 1971.) Dis. Abst. Int. 32B: 6051; Apr. 1972.

Khan, Akhter. Children's Use of Perceptual Groupings in Counting. (University of Oregon, 1972.) Dis. Abst. Int. 33A: 4944; Mar. 1973.

Khan, Masarrat Ali. A Comparison of Some Aspects of Mathematical Achievement of Sixth Grade Pupils at Lahore, Pakistan and Berkeley, California, U.S.A. (University of California, Berkeley, 1970.) Dis. Abst. Int. 32A: 672; Aug. 1971.

Kidder, Francis Richard. An Investigation of Nine, Eleven, and Thirteen Year-Old Children's Comprehension of Euclidean Transformations. (University of Georgia, 1973.) *Dis. Abst. Int.* 34A: 3238-3239; Dec. 1973.

Kiehl, Charles Frank. The Application of the Discriminant Function in Developing a Predictor of Success in Mathematics for Grades Four, Five, Six, Seven, and Eight. (State University of New York at Buffalo, 1973.) *Dis. Abst. Int.* 33A: 5408-5409; Apr. 1973.

Kieren, Thomas Ervin. The Computer as a Teaching Aid for Eleventh Grade Mathematics: A Comparison Study. (University of Minnesota, 1968.) *Dis. Abst.* 29A: 3526-3527; Apr. 1969.

Killough, Charles Kyle. An Analysis of the Longitudinal Effects That a Nongraded Elementary Program, Conducted in an Open-Space School, Had on the Cognitive Achievement of Pupils. (University of Houston, 1971.) *Dis. Abst. Int.* 32A: 3614; Jan. 1972.

Kilpatrick, Jeremy. Analyzing the Solution of Word Problems in Mathematics: An Exploratory Study. (Stanford University, 1967.) *Dis. Abst.* 28A: 4380; May 1968.

Kim, Jung Soon. Comparative Study of Secondary School Mathematics Programs of the Selected Mathematics Study Groups in the United States with the Mathematics Program of the Ministry of Education in the Republic of Korea. (Temple University, 1972.) *Dis. Abst. Int.* 33A: 81-82; July 1972.

King, Donald Thomas. An Instructional System for the Low-Achiever in Mathematics: A Formative Study. (University of Wisconsin, 1972.) *Dis. Abst. Int.* 32A: 6743; June 1972.

King, Irvin Leon. A Formative Development of a Unit on Proof for Use in the Elementary School. (University of Wisconsin, 1969.) *Dis. Abst. Int.* 31A: 680-681; Aug. 1970.

King, Robert William. An Investigation of the Effects of Group Interaction on Learning Mathematics Using a Programed Text Developed Under a Broadened Concept of Programed Instruction. (The Florida State University, 1967.) *Dis. Abst.* 28A: 1004; Sept. 1967.

Kirkpatrick, Joan Elizabeth. The Use of Finite Mathematical Systems to Achieve Selected Mathematics Objectives in Grade Six. (University of Minnesota, 1970.) Dis. Abst. Int. 32A: 306-307; July 1971.

Kissel, Mary Ann. A Comparative Investigation of the Efficiency of Two Classroom Observational Methods. (University of Pittsburgh, 1970.) *Dis. Abst. Int.* 31A: 4385-4386; Mar. 1971.

Kleckner, Lester Gerald. An Experimental Study of Discovery Type Teaching Strategies with Low Achievers in Basic Mathematics I. (Pennsylvania State University, 1968.) Dis. Abst. Int. 30A: 1075-1076; Sept. 1969.

Klein, Melvin Philip. The Group of Isometries in Tenth Year Mathematics: A Comparison of the Relative Effectiveness of Two Approaches to Selected Topics in Geometry with Respect to Achievement in Geometry and Interest in Mathematics. (New York University, 1972.) Dis. Abst. Int. 33A: 2076; Nov. 1972.

Klein, Paul Alfred. Toward a Theory of Sequencing: Study 1-1: An Exploration of Selected Relationships Among the Enactive, Iconic and Symbolic Modes of Representation. (Pennsylvania State University, 1970.) Dis. Abst. Int. 31A: 4624-4625; Mar. 1971.

Knaupp, Jonathan Elmer. A Study of Achievement and Attitude of Second Grade Students Using Two Modes of Instruction and Two Manipulative Models for the Numeration System. (University of Illinois at Urbana-Champaign, 1970.) Dis. Abst. Int. 31A: 6471; June 1971.

Knifong, James Dan. The Representation of Cognitive Structures of Four and a Half Year Old Children. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 4424; Feb. 1972.

Knight, Carlton Walter, II. The Impact of Atmospheric Pressure Upon Mathematical Performance. (University of Oregon, 1968.) Dis. Abst. Int. 30A: 495; Aug. 1969.

Knight, Genevieve Madeline. The Effect of a Sub-Culturally Appropriate Language Upon Achievement in Mathematical Content. (University of Maryland, 1970.) Dis. Abst. Int. 31B: 7433-7434; June 1971.

Knowlden, Gayle Elizabeth. Teaching English Language and Mathematical Symbolism to Verbally Disadvantaged Kindergarten Children. (University of California, Los Angeles, 1966.) Dis. Abst. 27A: 3623-3624; May 1967.

Knox, Donald Maser. An Experimental Study of the Effect of a Team Teaching Program upon Certain Selected Variables (Achievement-Anxiety-Social Relations). (Western Reserve University, 1965.) Dis. Abst. 27A: 416-417; Aug. 1966.

Koch, Dale Roy. Concept of Self and Mathematics Achievement. (Auburn University, 1972.) Dis. Abst. Int. 33A: 1081; Sept. 1972.

Koch, Richard Roy. A Study of the Effectiveness of a Unit in Geomtry Utilizing ETV for Third and Fourth Graders. (Rutgers University, The State University of New Jersey, 1970.) Dis. Abst. Int. 31B: 4202; Jan. 1971.

Kohler, Emmett Theodore. An Investigation of Cloze Scores in Terms of Selected Cognitive Variables. (Florida State University, 1966.) *Dis. Abst.* 27A: 114-115; July 1966.

Kohli, Paul Eugene. An Analysis of Differential Aptitude Test Scores and Prediction of High School Academic Performance. (University of Toledo, 1968.) *Dis. Abst.* 29A: 2528; Feb. 1969.

Kolb, John Ronald. The Contributions of an Instructional Sequence in Mathematics Related to Quantitative Science Exercises in Grade Five. (University of Maryland, 1967.) *Dis. Abst.* 28A: 3561-3562; Mar. 1968.

Kooistra, William Henry. Developmental Trends in the Attainment of Conservation, Transitivity, and Relativism in the Thinking of Children: A Replication and Extension of Piaget's Ontogenetic Formulations. (Wayne State University, 1963.) *Dis. Abst.* 25: 2032; Sept. 1964.

Koopman, Norbert Earl. Evaluations by Superior High School Students of Their Problem Solving Performances. (University of Wisconsin, 1964.) *Dis. Abst.* 25: 3398; Dec. 1964.

Kort, Anthone Paul. Transformation vs. Non-Transformation Tenth-Grade Geometry: Effects on Retention of Geometry and on Transfer in Eleventh-Grade Mathematics. (Northwestern University, 1971.) *Dis. Abst. Int.* 32A: 3157-3158; Dec. 1971.

Kosanovich, Robert Joseph. A Study of the Cognitive Development of Length and Area Measurement. (Michigan State University, 1971.) *Dis. Abst. Int.* 32A: 6293; May 1972.

Kosky, Elizabeth Mary. Relationship of Selected Variables to Academic Achievement for Fifth and Sixth Grade Students: Verbal IQ, Perception of Self in School, Race, Fate Control, Socio-Economic Status, and Sex. (University of Miami, 1972.) *Dis. Abst. Int.* 33A: 2767; Dec. 1972.

Kove, Lila Barth. Deductive Reasoning and Problem Solving. (University of Connecticut, 1973.) *Dis. Abst. Int.* 34A: 1487; Oct. 1973.

Kraemer, Ruth Ahsmuhs. The Effects of the Cluster Plan on Mathematics and Science Students' Achievement Scores in the Oklahoma City Public Schools, 1970-1971. (University of Oklahoma, 1972.) *Dis. Abst. Int.* 33A: 499; Aug. 1972.

Kratzer, Richard Oren. A Comparison of Initially Teaching Division Employing the Distributive and Greenwood Algorithm with the Aid of a Manipulative Material. (New York University, 1971.) *Dis. Abst. Int.* 32A: 5672; Apr. 1972.

Krause, Marina Caroline. The Modern Mathematics Movement: Evolution and Implications. (Arizona State University, 1969.) Dis. Abst. 29A: 2539; Feb. 1969.

Krauser, Arthur William. An Investigation of the Development of Abstract Thinking in Children Through Programmed Instruction. (University of Rochester, 1964.) Dis. Abst. 25: 5376; Mar. 1965.

Krautheim, Joseph James. Development of a Framework for Diagnostic Teaching. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 4490; Feb. 1972.

Krebs, Eleanore Goodlin. The Wechsler Preschool and Primary Scale of Intelligence and Prediction of Reading Achievement in First Grade. (Rutgers, The State University, 1969.) Dis. Abst. Int. 30A: 4279; Apr. 1970.

Krenzel, Ken. Development of Equivalence of Amount in the Visual and Haptic Modalities. (Yeshiva University, 1970.) Dis. Abst. Int. 31A: 4552; Mar. 1971.

Kriegsman, Helen Florence. Proposal for Integrating the Concepts of Plane and Solid Geometry Based on Student Thinking About the Concept of Dimension. (Ohio State University, 1964.) Dis. Abst. 25: 1046-1047; Aug. 1964.

Kriewall, Thomas Edward. Applications of Information Theory and Acceptance Sampling Principles to the Management of Mathematics Instruction. (University of Wisconsin, 1969.) Dis. Abst. Int. 30A: 5344; June 1970.

Kristjansdottir, Thuridur Johanna. The Relationship of Preschool Experience to Achievement and Selected Aspects of Adjustment in Grade One. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 5612-5613; Apr. 1972.

Krug, David A. An Investigation of the Effects of Experimental Manipulation of a Token System on Rate of Computation. (University of Washington, 1972.) Dis. Abst. Int. 33A: 4208-4209; Feb. 1973.

Kuefler, Melvin Mathias. An Evaluation of the Effectiveness of a High School Remedial Education Program. (University of Oregon, 1972.) Dis. Abst. Int. 33A: 5441; Apr. 1973.

Kuenz, Marjorie Anne. The Relationship of Non-Cognitive Variables to Academic Achievement Measures in High School Students. (University of Florida, 1972.) Dis. Abst. Int. 34A: 3145-3146; Dec. 1973.

Kuhfittig, Peter Kurt Friedrich. The Effectiveness of Discovery Learning in Relation to Concrete and Abstract Teaching Methods in Mathematics. (George Peabody College for Teachers, 1972.) Dis. Abst. Int. 33A: 1323; Oct. 1972.

Kulm, Gerald. The Readability of Elementary Algebra Textual Material. (Columbia University, 1971.) Dis. Abst. Int. 32A: 2913; Dec. 1971.

Kwansa, Kofi Bassa. Investigation of the Relative Content Validity of Norm-Referenced and Domain-Referenced Arithmetic Tests. (University of Pittsburgh, 1972.) Dis. Abst. Int. 33A: 3959-3960; Feb. 1973.

Labaki, Felix George. The Development of a Scale for Measuring the Attitudes of Middle-School and High-School Students Toward Geometry. (State University of New York at Buffalo, 1973.) Dis. Abst. Int. 34A: 1704-1705; Oct. 1973.

Lackey, Kenneth Elbert. A Comparison of the Effects of Information Feedback Variation on Arithmetic Achievement. (University of Missouri-Columbia, 1970.) Dis. Abst. Int. 31A: 5037-5038; Apr. 1971.

Lackner, Lois Marie. The Teaching of the Limit and Derivative Concepts in Beginning Calculus by Combinations of Inductive and Deductive Approaches. (University of Illinois, 1968.) Dis. Abst. 29A: 2150-2151; Jan. 1969.

LaCrosse, Jean E. The Relationship Between Piagetian Stage of Spatial Concept Development and Rod-and-Frame Test Performance. (University of North Carolina at Chapel Hill, 1966.) Dis. Abst. 27B: 2871-2872; Feb. 1967.

Laing, Robert Andrew. Relative Effects of Masses and Distributed Scheduling of Topics on Homework Assignments of Eighth Grade Mathematics Students. (Ohio State University, 1970.) Dis. Abst. Int. 31A: 4625; Mar. 1971.

Laliberte, Richard Arsene. Multivariate Statistical Prediction/Classification of Students Within Instructional Levels in Selected Ninth Grade Subjects: A Comparison of the Relative Effectiveness of the Multiple Regression and Discriminant Models. (Oklahoma State University, 1969.) Dis. Abst. Int. 31B: 4970-4971; Feb. 1971.

Lamanna, Joseph B., Jr. The Effect of Teacher Verbal Behavior on Pupil Achievement in Problem Solving in Sixth Grade Mathematics. (St. John's University, 1968.) Dis. Abst. 29A: 3042-3043; Mar. 1969.

Lamon, William Emile. Structural Learning Characteristics of Children from Differing Instructional Backgrounds as Manifested in the Learning of Certain Mathematical Groups. (University of California, Berkeley, 1968.) Dis. Abst. Int. 30A: 212-213; July 1969.

Lampela, Roland Mitchell. An Investigation of the Relationship Between Teacher Understanding and Change in Pupil Understanding of Selected Concepts in Elementary School Mathematics. (University of California, Los Angeles, 1966.) *Dis. Abst.* 27A: 1548-1549; Dec. 1966.

Lane, Johnie Marcus. A Study of Two Modes of Reinforcement in Programmed and Block Arithmetic Learning Materials. (University of Alabama, 1963.) *Dis. Abst.* 25: 1748-1749; Sept. 1964.

Langley, Jan Franks. Classification Behaviors of Mentally Retarded, Lower Socio-Economic Status and Middle Socio-Economic Status Elementary School Children. (University of Texas at Austin, 1971.) *Dis. Abst. Int.* 32A: 6251; May 1972.

Langston, Genevieve Reitzell. A Study of the Effect of Certain Structured Experiences in Science, Social Science, and Mathematics on Beginning Reading in Gifted Five Year Olds. (University of Illinois, 1964.) *Dis. Abst.* 25: 1049; Aug. 1964.

Lanier, Perry Eugene. A Study of Creativity, Intelligence and Discovery Teaching as Related to Performance in Elementary School Mathematics. (University of Oklahoma, 1967.) *Dis. Abst.* 28A: 1004-1005; Sept. 1967.

Larson, John Charles. A Developmental Index of Numerical Cognitive Performance. (University of Michigan, 1971.) *Dis. Abst. Int.* 32A: 6208; May 1972.

Lash, Stark William Edward. A Comparison of Three Types of Homework Assistance for High School Geometry. (Temple University, 1971.) *Dis. Abst. Int.* 32A: 1984; Oct. 1971.

Laskaris, Jane Buck. Some Effects of the Experimental Manipulation of Teacher Expectations on the Measured Academic Growth of Fifth-Grade Children. (University of Delaware, 1971.) *Dis. Abst. Int.* 32A: 6209; May 1972.

Lasswell, Edmund Clarence. Incremental Programing: Exploration of a Technique for Meeting Individual Needs of High School Mathematics Students Through Hierarchical Task Analysis and Materials to Support Behavioral Assignments. (Southern Illinois University, 1970.) *Dis. Abst. Int.* 31A: 5272; Apr. 1971.

Lauda, Billy George. Utilization of Secondary School Sites in Fulfilling the Objectives of Teaching Art, Mathematics, and Science in Pennsylvania. (University of Pittsburgh, 1963.) *Dis. Abst.* 26: 825-826; Aug. 1965.

Lavos, George. Patterns of Intelligence and Achievement Among Deaf Children. (University of Michigan, 1965.) *Dis. Abst.* 27A: 397; Aug. 1966.

Lawrence, Otis O'Neal. The Effect of the Utilization of Selected Mathematics Concepts and Skills on Achievement in High School Chemistry by Students from Two Different Populations. (University of Oklahoma, 1971.) *Dis. Abst. Int.* 32A: 2404; Nov. 1971.

Lawson, John Berry. Achievement Differences in Fourth Grade Under Two Time Allotments and Two Sequences for Introducing Multiplication Facts. (University of California, Berkeley, 1966.) *Dis. Abst.* 27A: 995-996; Oct. 1966.

Lawton, Peter Andrew. Peer Relationships and Mathematical Achievement; A Study of the Relationship of Peer Acceptance and Peer Acceptability to Achievement in Mathematics. (New York University, 1970.) *Dis. Abst. Int.* 31A: 6281; June 1971.

Lazarus, JoAnn Mannise. The Development of a Kindergarten Mathematics Program: Implemented Through In-Service Teacher Education. (Wayne State University, 1972.) *Dis. Abst. Int.* 33A: 2220-2221; Nov. 1972.

Leach, John Nathaniel. Cultural Factors Affecting the Adjustment of Puerto Rican Children to Schooling in Hartford, Connecticut. (University of Connecticut, 1971.) *Dis. Abst. Int.* 32A: 2308; Nov. 1971.

Leary, James William. The Effect of Varying Schedules of Knowledge of Correct Response in Programed Instruction. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 2078-2079; Nov. 1972.

LeBlanc, John Francis. The Performance of First Grade Children in Four Levels of Conservation of Numerousness and Three I.Q. Groups When Solving Arithmetic Subtraction Problems. (University of Wisconsin, 1968.) *Dis. Abst.* 29A: 67; July 1968.

LeDoux, Norma Henry. An Analysis of Deviations From Expected Gains in Pupil Test Scores. (University of California, Los Angeles, 1966.) *Dis. Abst.* 27A: 3624-3625; May 1967.

LeDuc, John William. A Measure of Ability to Read Concise Mathematics Language. (University of Illinois at Urbana-Champaign, 1971.) *Dis. Abst. Int.* 32A: 5655; Apr. 1972.

Lee, Kwi-Yoon. A Study and Analysis of the Effectiveness of Computer Assisted Reporting of Fifth Grade Pupils' Mathematical Progress as Perceived by Parents and Pupils. (University of Iowa, 1972.) *Dis. Abst. Int.* 33A: 1368; Oct. 1972.

Leeb-Lundberg, Kristina A. M. Friedrich Froebel's Mathematics for the Kindergarten: Philosophy, Program, and Implementation in the United States. (New York University, 1972.) *Dis. Abst. Int.* 33A: 176; July 1972.

Leffin, Walter William. A Study of Three Concepts of Probability Possessed by Children in the Fourth, Fifth, Sixth and Seventh Grades. (University of Wisconsin, 1968.) *Dis. Abst.* 29A: 4397; June 1969.

LeJeune, Stanley Joseph. The Development of an Instrument to Determine Achievement in Modern Mathematics in Grades Four, Five, and Six. (University of Mississippi, 1967.) *Dis. Abst.* 28A: 4383-4384; May 1968.

Lenchner, George. A Study of the Effect of the Use of Overhead Projection on Achievement in Presenting Selected Topics of Circular Functions. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 1981-1982; Nov. 1972.

Leonard, Harold A. Difficulties Encountered by Elementary Algebra Students in Solving Equations in One Unknown--A Diagnosis of Errors and a Comparison After Forty Years. (Ohio State University, 1966.) *Dis. Abst.* 27A: 3778; May 1967.

Lesh, Richard Arthur. The Generalization of Piagetian Operations as it Relates to the Hypothesized Functional Interdependence Between Class, Series and Number Concepts. (Indiana University, 1971.) *Dis. Abst. Int.* 32B: 4731; Feb. 1972.

Lesher, Ronald Eugene. A Study of Logical Thinking in Grades Four Through Seven. (Lehigh University, 1971.) *Dis. Abst. Int.* 32A: 2487; Nov. 1971.

Leskow, Sonia. Developmental Changes in Children's Understanding of Permutation. (Purdue University, 1968.) *Dis. Abst.* 29B: 3107-3108; Feb. 1969.

Lester, Frank Klein, Jr. Developmental Aspects of Human Problem Solving in a Simple Mathematical System Via Computer Assisted Instruction. (Ohio State University, 1972.) *Dis. Abst. Int.* 33A: 4178; Feb. 1973.

Levin, Alvin Irving. The Use of Taxonomic Programming as Applied to the Teaching of Fractions in Grade Five. (University of California, Los Angeles, 1968.) *Dis. Abst.* 29A: 1782-1783; Dec. 1968.

Levin, William Jeffrey. The Effectiveness and Generalization of Ability-Oriented and Effort-Oriented Reinforcement for Improving the Academic Performance of Underachievers. (University of Texas at Austin, 1971.) *Dis. Abst. Int.* 32B: 6652; May 1972.

Levine, George Ivan. Actual and Perceived Attitudes Toward Mathematics of Pupils and Their Mothers. (Columbia University, 1972.) Dis. Abst. Int. 33A: 3960; Feb. 1973.

Lewis, Jimmy Costilla. A Comparison of the Mathematics Achievement of Black Students in Racially Mixed and Non-Racially Mixed Schools. (University of Texas at Austin, 1972.) Dis. Abst. Int. 33A: 4683; Mar. 1973.

Lewis, Vernon Chris. The Prediction of Academic Performance from Adolescent Attitude-Press Organizations. (Claremont Graduate School and University Center, 1968.) Dis. Abst. 29A: 2095-2096; Jan. 1969.

Lewis, William Eugene. Effects of Rate and Accuracy of Test Responses, Removal of Test Time-Limits and Teacher Expectancies on Achievement Test Scores of Disadvantaged Third Grade Students in Denver. (Oregon State University, 1973.) Dis. Abst. Int. 34A: 2170-2171; Nov. 1973.

Libeskind, Shlomo. A Development of a Unit on Number Theory for Use in High School, Based on a Heuristic Approach. (University of Wisconsin, 1971.) Dis. Abst. Int. 32B: 3504; Dec. 1971.

Lichtenberg, Donovan Royce. The Emergence of Structure in Algebra. (University of Wisconsin, 1966.) Dis. Abst. 28A: 543; Aug. 1967.

Lichter, Solomon Sidney. Achievement in Reading and Arithmetic of the Pupils in a Junior High School as it is Affected by the Development and Use of a Behavioral Change Process. (New York University, 1964.) Dis. Abst. 25: 1049-1050; Aug. 1964.

Lindenbaum, Saul Lloyd. The Relationship Between the Development of Logical Operations in Length Measurement and Size Constancy. (Boston University Graduate School, 1968.) Dis. Abst. 29B: 2637; Jan. 1969.

Lindgren, Richard Francis. A Comparison of Team Learning with Learning Through Conventional Teaching as Methods in Teaching Arithmetic Reasoning in Grades Four and Five. (University of Connecticut, 1965.) Dis. Abst. 28A: 3369; Mar. 1968.

Linkhart, Bennie Robert. Current Patterns in Selected Advanced Placement Mathematics Programs Within the State of Arizona. (University of Arizona, 1968.) Dis. Abst. 29A: 1166; Oct. 1968.

Linton, Thomas, Jr. The Effects of Grade Displacement Between Student Tutors and Students Tutored. (University of Cincinnati, 1972.) Dis. Abst. Int. 33A: 4091-4092; Feb. 1973.

Linville, William Jerome. The Effects of Syntax and Vocabulary Upon the Difficulty of Verbal Arithmetic Problems with Fourth Grade Students. (Indiana University, 1969.) Dis. Abst. Int. 30A: 4310; Apr. 1970.

Lockley, Jeanette Elaine. A Comparative Study of Some Cluster Analytic Techniques with Application to the Mathematics Achievement in Junior High Schools. (Stanford University, 1970.) Dis. Abst. Int. 31A: 3982-3983; Feb. 1971.

Loftus, Elizabeth Jane Fishman. An Analysis of the Structural Variables That Determine Problem-Solving Difficulty on a Computer-Based Teletype. (Stanford University, 1970.) Dis. Abst. Int. 31A: 5853; May 1971.

Logiudice, Joseph F. The Relationship of Self-Esteem, Test Anxiety and Sixth Grade Students' Arithmetical Problem Solving Efficiency Under Variant Test Instructions. (St. John's University, 1970.) Dis. Abst. Int. 31B: 2995-2996; Nov. 1970.

Loh, Elwood Lockert. The Effect of Behavioral Objectives on Measures of Learning and Forgetting on High School Algebra. (University of Maryland, 1972.) Dis. Abst. Int. 33A: 145; July 1972.

Lohr, Charles Michael. An Investigation to Determine Characteristics of Situations in Which Discovery Techniques are Utilized in Selected Sixth, Seventh, and Eighth Grade Mathematics Textbooks. (University of Virginia, 1968.) Dis. Abst. 29A: 3917; May 1969.

Long, Harvey Shenk. A Determination of the Relation of the Total Time for Course Completion to the Duration of the Study Interval in Teaching Via Computer Assisted Instruction. (New York University, 1969.) Dis. Abst. Int. 30A: 2422; Dec. 1969.

Longbotham, Jack Henry. The Use of Blackboard-by-Wire Electronic Communication System and Programmed Materials for the Enrichment of Mathematics Teaching in Selected Texas Schools. (Texas A & M University, 1968.) Dis. Abst. 29A: 3876-3877; May 1969.

Lopata, David John. The Effects of Learning Sets on Conservation Acquisition in Blind and Sighted Children. (Catholic University of America, 1973.) Dis. Abst. Int. 34B: 859; Aug. 1973.

Lorance, Theodore Wayne. The Relationship of Reactive Inhibition to Intelligence and to Achievement in Reading and Arithmetic. (University of Missouri, 1965.) Dis. Abst. 26: 5238; Mar. 1966.

Lorentz, Jerome Stephen. An Experimental Study of the Effects of Varying the Amount and Sequencing of Explanatory Materials in the Teaching of Formal Mathematical Definitions. (University of Georgia, 1970.) Dis. Abst. Int. 32A: 5853; Nov. 1971.

Lorenzen, Fred Joseph, Jr. An Investigation of the Learning of Advanced Equality and Inequality Concepts by Third Grade Children. (Syracuse University, 1972.) Dis. Abst. Int. 34A: 1003-1004; Sept. 1973.

Loughlin, Catherine Ellen. First Grade Adjustment and Achievement of Early Kindergarten Entrants and Older Kindergarten Entrants. (Rutgers - The State University, 1966.) Dis. Abst. 27A: 606; Sept. 1966.

Love, Sister Marie Genevieve. Instruction in Geometry in the Junior High School. (Columbia University, 1963.) Dis. Abst. 24: 5246-5247; June 1964.

Lovett, Carl James. An Analysis of the Relationship of Several Variables to Achievement in First Year Algebra. (University of Texas at Austin, 1969.) Dis. Abst. Int. 30A: 1470; Oct. 1969.

Lowerre, George Fitzgerald. Conceptually Based Development of Individualized Materials for Critical Thinking Based on Logical Inference. (University of Pennsylvania, 1972.) Dis. Abst. Int. 33A: 1418; Oct. 1972.

Lucas, James Stanley. The Effect of Attribute-Block Training on Children's Development of Arithmetic Concepts. (University of California, Berkeley, 1966.) Dis. Abst. 27A: 2400-2401; Feb. 1967.

Ludeman, Clinton John. A Comparison of Achievement in an Accelerated Program and a Standard Program of High School Mathematics in Lincoln, Nebraska, Schools. (University of Nebraska, 1969.) Dis. Abst. Int. 31A: 299-300; July 1970.

Luttrell, Homer Dale. The Effect of Supplementary Audio Tapes on the Performance of Seventh-Grade Students Who Read Below Grade Level and Were Enrolled in an Individualized Science Program - ISCS. (Florida State University, 1971.) Dis. Abst. Int. 32A: 1366; Sept. 1971.

Lutz, Paul Norman. Hardboard Slates as a Feedback Device in Fifth Grade Mathematics. (University of Oregon, 1970.) Dis. Abst. Int. 31A: 5273; Apr. 1971.

Ly, Pham Thi. The Extent of Uniformity in the Elementary Arithmetic Curriculum in Sixty City School Systems. (Ohio University, 1964.) Dis. Abst. 26: 3109; Dec. 1965.

Lytle, Archie Kirtly, III. The Effects of Two Learning Sequences on Achievement, Transfer, and Retention of the Limit Principle by Eleventh and Twelfth Year Students. (University of Michigan, 1973.) Dis. Abst. Int. 34A: 1772-1773; Oct. 1973.

MacDonnell, Joseph Francis. An Analysis of Selected Aspects of the UNESCO Mathematics Program for the Arab States and Iraq's Present Secondary School Mathematics Program. (Columbia University, 1972.) Dis. Abst. Int. 33A: 3961-3962; Feb. 1973.

Mackey, Beryl Floyd. The Influence of a Summer Head Start Program on the Achievement of First Grade Children. (East Texas State University, 1968. Dis. Abst. 29A: 3500-3501; Apr. 1969.

Maclay, Charles Wylie, Jr. The Influence of Two Prerequisite Programs on Achievement in the High School Advanced Placement Calculus Course. (University of Virginia, 1968.) Dis. Abst. 29A: 3917-3918; May 1969.

MacPherson, Eric Duncan. Some Correlations of Anxiety in Learning Programmed Mathematics. (Washington State University, 1966.) Dis. Abst. 27A: 2948; Mar. 1967.

Macready, George Byron. An Investigation Into the Nature of Interitem Relations and the Structure of Domain Hierarchies Found Within a Domain Referenced Testing System. (University of Minnesota, 1972.) Dis. Abst. Int. 33A: 2174; Nov. 1972.

Madden, Joseph Vincent. An Experimental Study of Student Achievement in General Mathematics in Relation to Class Size. (Arizona State University, 1966.) Dis. Abst. 27A: 631-632; Sept. 1966.

Maertens, Norbert William. An Analysis of the Effect of Arithmetic Homework Upon the Arithmetic Achievement of Third Grade Pupils. (University of Minnesota, 1967.) Dis. Abst. 28A: 4535; May 1968.

Mahaffey, Michael Lee. An Experimental Comparison of Students and Teachers in Culturally Deprived and Non-Culturally Deprived Schools in a Mathematics In-Service Training Program. (Southern Illinois University, 1968.) Dis. Abst. 29A: 2589-2590; Feb. 1969.

Mahan, James Maurice. The Effects of Instruction by Teachers and Teacher Aides Upon the Performance of Pupils in a Direct Instruction Program. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 6838; June 1972.

Mahoney, Vincent David. A Branch Analysis of Graphing Behavior in Two Learning Hierarchies Within Piagetian Stages. (University of California, Berkeley, 1970.) Dis. Abst. Int. 31A: 5204-5205; Apr. 1971.

Malcolm, Susan Vanderwal. A Longitudinal Study of Attitudes Toward Arithmetic in Grades Four, Six and Seven. (Case Western Reserve University, 1971.) Dis. Abst. Int. 32A: 1194; Sept. 1971.

Malcom, Paul Joseph. Analysis of Attitude, Achievement, and Student Profiles as a Result of Individualized Instruction in Mathematics. (University of Nebraska, 1972.) Dis. Abst. Int. 33A: 3261-3262; Jan. 1973.

Manley, Myron B. A Factor Analytic Study of Three Types of Concept Attainment Tasks. (Princeton University, 1966.) Dis. Abst. 27B: 600-601; Aug. 1966.

Manning. Gary Lee. Development, Implementation and Evaluation of an In-Service Program in Elementary School Mathematics. (University of Nebraska, 1972.) Dis. Abst. Int. 33A: 1568-1569; Oct. 1972.

Marazzi, Maureen Katherine. Academic Performance and Prediction of Performance of Specially Admitted, Economically Disadvantaged Students and Other Students in an Urban Restricted-Admissions High School. (New York University, 1971.) Dis. Abst. Int. 33A: 83; July 1972.

Marchi, Jack Ugo. Comparison of Selected Piagetian Tasks with the Wechsler Intelligence Scale for Children as Measures of Mental Retardation. (University of California, Berkeley, 1970.) Dis. Abst. Int. 31A: 6442; June 1971.

Marcum, Roger Brasel. An Exploration of the First-Year Effects of Racial Integration of the Elementary Schools in a Unit School District. (University of Illinois, 1968.) Dis. Abst. Int. 30A: 69-70; July 1969.

Mardell, Carol Goldstein. The Prediction of Mathematical Achievement from Measures of Cognitive Processes. (Northwestern University, 1972.) Dis. Abst. Int. 33A: 2768-2769; Dec. 1972.

Maricle, William O. A Follow-Up Study of an Experimental Seventh-Grade Mathematics Program. (University of Colorado, 1969.) Dis. Abst. Int. 31B: 1403-1404; Sept. 1970.

Marks, Robert Randolph. The Testing of a Diagnostic and Remedial Teaching Technique in the Mastery of Certain Addition Facts. (University of Virginia, 1964.) Dis. Abst. 26: 159; July 1965.

Mars, Paul Arne. High School Geometry Achievement as Related to Reading Achievement, Arithmetic Achievement, and General Intelligence in the Public Schools of Lincoln, Nebraska. (University of Nebraska, 1970.) *Dis. Abst. Int.* 31A: 1691-1692; Oct. 1970.

Martin, Joanna May. The Effects of Rote and Discovery Teaching Methods of Fifth, Seventh, and Ninth Grade Students of a Low and Middle Socio-Economic Background. (Oklahoma State University, 1970.) *Dis. Abst. Int.* 31A: 5941; May 1971.

Martin, Mavis Doughty. Reading Comprehension, Abstract Verbal Reasoning, and Computation as Factors in Arithmetic Problem Solving. (State University of Iowa, 1963.) *Dis. Abst.* 24: 4547-4548; May 1964.

Martin, Ralph Clyde. A Study of Methods of Structuring a Proof as an Aid to the Development of Critical Thinking Skills in High School Geometry. (University of Kansas, 1970.) *Dis. Abst. Int.* 31A: 5875-5876; May 1971.

Masek, Richard Martin. The Effects of Teacher Applied Social Reinforcement on Arithmetic Performance and Task-Orientation. (Utah State University, 1970.) *Dis. Abst. Int.* 30A: 5345-5346; June 1970.

Massarotti, Michael Charles. Effect of the Spanish Language as Auditory Stimulation During Test Administration on the Measured Achievement of Fifth Grade Spanish-Surnamed Pupils. (University of Denver, 1971.) *Dis. Abst. Int.* 32A: 3865-3866; Jan. 1972.

Mastain, Richard Kent. A Comparison of the Effect of Two Mathematics Curricula on the Mathematical Understanding of Fourth Grade Pupils. (University of Southern California, 1964.) *Dis. Abst.* 25: 3439-3440; Dec. 1964.

Mastantuono, Albert Kenneth. An Examination of Four Arithmetic Attitude Scales. (Case Western Reserve University, 1970.) *Dis. Abst. Int.* 32A: 248; July 1971.

Mastbaum, Sol. A Study of the Relative Effectiveness of Electric Calculators or Computational Skills Kits in the Teaching of Mathematics. (University of Minnesota, 1969.) *Dis. Abst. Int.* 30A: 2422-2423; Dec. 1969.

Masterson, Sister Hannah Marie. Learning Through Teaching: The Effects of Arithmetic Tutoring on High School Tutors and Their First-Grade Pupils. (New York University, 1970.) *Dis. Abst. Int.* 31A: 6473; June 1971.

Matlin, John Paul. Some Effects of a Planned Program of Acceleration Upon Elementary School Children. (University of California, Berkeley, 1965.) Dis. Abst. 26: 827-828; Aug. 1965.

Matthews, Cecil Allen. The Effect of an All Male Kindergarten and First Grade Environment on the Development of Boys. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4148; Apr. 1970.

Matulis, Robert Stanley. A Survey of the Understandings of Selected Concepts of Logic by 8-18-Year-Old Students. (University of Florida, 1969.) Dis. Abst. Int. 31A: 1079; Sept. 1970.

May, Daryle Cline. An Investigation of the Relationship Between Selected Personality Characteristics of Eighth-Grade Students and Their Achievement in Mathematics. (University of Florida, 1971.) Dis. Abst. Int. 33A: 555; Aug. 1972.

May, Lola June. A Statistical Comparison of the Effectiveness of Teaching Per Cent by the Traditional, Ratio, and Discovery Methods. (Northwestern University, 1965.) Dis. Abst. 26: 3109-3110; Dec. 1965.

Mayes, Thomas A. A Study of the Effects of a Parent Education Program on Third Grade Arithmetic Achievement Levels. (Michigan State University, 1965.) Dis. Abst. 26: 4417; Feb. 1966.

Maynard, Freddy Joseph. A Comparison of Three Methods of Teaching Selected Content in Eighth and Ninth Grade General Mathematics Courses. (University of Georgia, 1969.) Dis. Abst. Int. 30A: 5347; June 1970.

Maytubby, Willard Dorse. Comparative Prediction of Academic Achievement Among "Disadvantaged" and "Middle-Class" Children. (St. Louis University, 1971.) Dis. Abst. Int. 32A: 4426; Feb. 1972.

Mazur, Joseph Lawrence. Validity of Scholastic Aptitude Scores as Predictors of Achievement. (Case Western Reserve University, 1968.) Dis. Abst. Int. 30A: 171; July 1969.

Mazzei, Joseph. The Use of Feedback and Reinforcement in Controlling Maladaptive Classroom Behavior. (West Virginia University, 1972.) Dis. Abst. Int. 33B: 6088; June 1973.

McAloon, Sister Mary DeLourdes. An Exploratory Study on Teaching Units in Logic to Grades Three and Six. (University of Michigan, 1969.) Dis. Abst. Int. 30A: 1918-1919; Nov. 1969.

McCabe, James Joseph. The Strength of IQ and Creativity in Predicting Academic Achievement Among Educable Retarded Students. (University of Georgia, 1973.) Dis. Abst. Int. 34A: 3191; Dec. 1973.

McCardle, Robert William. Thermal Environment and Learning. (University of Iowa, 1966.) Dis. Abst. 27A: 356; Aug. 1966.

McCarty, Theron Phillip. The Relative Effectiveness of Introducing Percentage in Grades Four, Five and Six. (University of California, Berkeley, 1966.) Dis. Abst. 27A: 3628-3629; May 1967.

McClain, Paul David. The Relationship Between Performance on Conservation Tasks and Developmental Age. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 3393; Jan. 1973.

McClure, Clair Wylie. Effectiveness of Mathematics Laboratories for Eighth Graders. (Ohio State University, 1971.) Dis. Abst. Int. 32B: 4078; Jan. 1972.

McClure, Sherman Le Jeal. The Application of Cognitive Dissonance Theory to the Acquisition of a Piagetian Conservation Task by Selected Elementary School Children. (Oregon State University, 1971.) Dis. Abst. Int. 31B: 6948; May 1971.

McClure, Wesley Cornelious. A Multivariate Inventory of Attitudes Toward Selected Components of Elementary School Mathematics. (University of Virginia, 1970.) Dis. Abst. Int. 31A: 5941-5942; May 1971.

McConnell, Dorothy Fraiser. Basic Concepts in Modern Mathematics for Elementary Schools in Texas. (Baylor University, 1967.) Dis. Abst. 28A: 399; Aug. 1967.

McCormick, Roy Lee. A Comparative Study of Two Methods of Teaching a Decimal System of Numeration. (Purdue University, 1965.) Dis. Abst. 26: 1430-1431; Sept. 1965.

McCreary, Joyce Yvonne Baker. Factors Affecting the Attainment of Conjunctive and Disjunctive Concepts in Third Grade Children. (University of Pittsburgh, 1963.) Dis. Abst. 26: 1794-1795; Sept. 1965.

McCullouch, James Victor. The Effect of Using a Behavioral Objectives Curriculum in Mathematics on the Achievement of Ninth-Grade Pupils in the Meridian Separate School District. (University of Alabama, 1970.) Dis. Abst. Int. 31A: 5114; Apr. 1971.

McCune, James Herbert. A Study of the Effects of a Sequence of Skill-Building Activities on a Group of Pre-School Children. (Wayne State University, 1970.) *Dis. Abst. Int.* 32A: 96; July 1971.

McDaniel, Roland. The Identification and Description of Changes in Mathematics Programs in the Secondary Schools in Tennessee Which Have Used NDEA Title III Funds. (University of Tennessee, 1972.) *Dis. Abst. Int.* 33B: 5395-5396; May 1973.

McDaniel, Willie Payton. A Study of Teacher Comments as Recorded on Cumulative Records for the Youngest and Oldest Children in the Sixth Grade of Selected Elementary Schools in the Los Angeles Unified School District. (Brigham Young University, 1972.) *Dis. Abst. Int.* 33A: 2661; Dec. 1972.

McDonald, Norma Lee Hale. A Study of Creativity in Educable Mentally Retarded Children. (University of Denver, 1970.) *Dis. Abst. Int.* 31A: 4587; Mar. 1971.

McDonald, William T. The Identification of Technical Vocabulary in Three Content Areas for Grades Four, Five, and Six. (University of Tennessee, 1968.) *Dis. Abst.* 29A: 2041; Jan. 1969.

McFarland, Frances Wallack. An Investigation of Seriation and Perception in the Structure and Function of Intellect in the Educable Mentally Retarded. (University of the Pacific, 1970.) *Dis. Abst. Int.* 31A: 2189-2190; Nov. 1970.

McFee, Evan Earl. The Relative Merits of Two Methodologies of Teaching the Metric System to Seventh Grade Science Students. (Indiana University, 1967.) *Dis. Abst.* 28A: 4053; Apr. 1968.

McGannon, Thomas Herbert. A Comparison of Two Methods of Teaching Calculus with Special Inquiry Into Creativity. (Northwestern University, 1970.) *Dis. Abst. Int.* 31A: 3785; Feb. 1971.

McGettigan, James Francis. Conservation of Number in Young Mentally Retarded Children. (Columbia University, 1969.) *Dis. Abst. Int.* 31A: 2739-2740; Dec. 1970.

McGinty, Robert LeRoy. The Effects of Four Methods of Instruction Upon the Ability of Second and Third Grade Students to Derive Valid Logical Conclusions from Verbally Expressed Hypotheses. (Michigan State University, 1972.) *Dis. Abst. Int.* 33A: 4686; Mar. 1973.

McIntosh, Jerry Allen. A Comparison of Student Achievement Relative to a Modern and Traditional Third Semester Course in High School Algebra. (Indiana University, 1964.) *Dis. Abst.* 25: 4563; Feb. 1965.

McIntyre, Robert B. Effects of Repetitious Programing in the Acquisition of Addition Facts in Educable Retardates. (George Peabody College for Teachers, 1964.) *Dis. Abst.* 25: 6394; May 1965.

McKee, Marjorie Ann Brand. The Components of Academic Success Studied in Seventy-Five (75) Educable Retarded Children: A Descriptive Study of Selected Factors. (Wayne State University, 1969.) *Dis. Abst. Int.* 30A: 3859; Mar. 1970.

McKellips, Raymond Leon. The Role of the Language and Operations on Sets in the Elementary Arithmetic Program. (Oklahoma State University, 1964.) *Dis. Abst.* 26: 1431; Sept. 1965.

McKinney, Max Terral. A Study of the Teaching and Use of the New Program Material in Mathematics in Selected Secondary Schools in Alabama. (Auburn University, 1964.) *Dis. Abst.* 25: 5155-5156; Mar. 1965.

McKinstry, Clarence Robert, Jr. The Behavior of Selected Fifth Grade Students as Related to Subject Areas and Teacher Roles. (University of Maryland, 1962.) *Dis. Abst.* 25: 1787-1788; Sept. 1964.

McKnight, Betty Jean. A Study of the Development of Elementary School Children's Concept of Volume. (Cornell University, 1965.) *Dis. Abst.* 26: 3175-3176; Dec. 1965.

McLaughlin, John Paul. Mathematics Achievement in Relation to Textbook Communication Style and Ability Group Membership: A Comparison of Two Seventh Grade Mathematics Textbooks. (University of Texas at Austin, 1969.) *Dis. Abst. Int.* 30A: 2911; Jan. 1970.

McLaughlin, Lynn Mary James. Age and Observational Learning of a Multiple Classification Task. (St. Louis University, 1972.) *Dis. Abst. Int.* 33B: 1271; Sept. 1972.

McLeod, Gordon Keith. An Experiment in the Teaching of Selected Concepts of Probability to Elementary School Children. (Stanford University, 1971.) *Dis. Abst. Int.* 32A: 1359; Sept. 1971.

McMahan, Ian Douglass. Causal Attributions and Expectancy of Success: Age and Sex Differences. (City University of New York, 1972.) *Dis. Abst. Int.* 32B: 6689-6690; May 1972.

McMillan, William B. The Effect of Monetary Reinforcement Upon Mathematics Performance with Sixth Grade Ghetto Children in a Naturalistic Classroom Setting. (Southern Illinois University, 1970.) Dis. Abst. Int. 31A: 5206; Apr. 1971.

McMillian, Joe Adair. Learning a Mathematical Concept With and Without a Physical Model as Predicted by Selected Mental Factors. (University of Houston, 1972.) Dis. Abst. Int. 33A: 4182; Feb. 1973.

McPherson, Ann Wesley. A Curriculum Study Based on the Application of Historical Materials in Elementary School Mathematics. (University of Tennessee, 1967.) Dis. Abst. 28A: 3565-3566; Mar. 1968.

Meadowcroft, Bruce Allen. An Experiment with Programmed Materials in Seventh Grade Arithmetic. (University of Pittsburgh, 1964.) Dis. Abst. 26: 1514-1515; Sept. 1965.

Mealy, Edward Clark. An Evaluation of the Use of Films as an Aid to Changing Students' Attitudes Toward Mathematics. (George Peabody College for Teachers, 1970.) Dis. Abst. Int. 31B: 4852; Feb. 1971.

Meconi, LaVerne Joseph. An Experimental Study of Concept Learning and Retention in Mathematics. (Ohio State University, 1966.) Dis. Abst. 27A: 2740-2741; Mar. 1967.

Meeker, Mary Nacol. Immediate Memory and Its Correlates with School Achievement. (University of Southern California, 1966.) Dis. Abst. 27A: 3727; May 1967.

Mehl, John Walter. Parental Attitude Toward the School, Student Confidence Level of Academic Ability, Selected Indices of Student Achievement: A Comparative Study of Relationships. (Michigan State University, 1973.) Dis. Abst. Int. 34A: 1099-1100; Sept. 1973.

Mehl, Michelle Vallette. Differences in the Grade Placements of Arithmetic Concepts, in the Methods Employed to Teach the Concepts, and in the Achievement Attained by Students in French and in American Schools. (Montana State University, 1964.) Dis. Abst. 26: 3703-3704; Jan. 1966.

Melaragno, Ralph James. A Comparison of Two Methods of Adapting Self-Instructional Materials to Individual Differences Among Learners. (University of Southern California, 1966.) Dis. Abst. 27B: 3273-3274; Mar. 1967.

Melnick, Gerald Irving. A Mechanism for Transition of Concrete to Abstract Cognitive Processes. (Yeshiva University, 1972.) Dis. Abst. Int. 33B: 3354; Jan. 1973.

Merfeld, Matt. A Rationale for the Development of a Tenth Grade Linear Algebra Course. (Rutgers, The State University, 1968.) Dis. Abst. 29A: 2042; Jan. 1969.

Mermelstein, Egon. The Effect of Lack of Formal Schooling on Number Development. (Michigan State University, 1965.) Dis. Abst. 26: 874-875; Aug. 1965.

Mermelstein, Jacob. An Investigation Concerning the Meaning of Synonyms and Antonyms of Words Denoting Time, Size and Amount for Children and Adults. (Rutgers, The State University, 1964.) Dis. Abst. 25: 3102; Nov. 1964.

Meyer, Rochelle Wilson. The Identification and Encouragement of Mathematical Creativity in First Grade Students. (University of Wisconsin, 1969.) Dis. Abst. Int. 31B: 809-810; Aug. 1970.

Michael, Elizabeth Marion Bodi. The Effect of Human Relations Training Upon the Academic Achievement of Pre- and Early Adolescent Children. (Wayne State University, 1968.) Dis. Abst. Int. 30A: 1340; Oct. 1969.

Mignerey, Richard Eugene. An Investigation of a Teaching Method to Develop Arithmetic Competencies in Tenth-Grade General Mathematics Students. (University of Toledo, 1971.) Dis. Abst. Int. 32A: 3867-3868; Jan. 1972.

Milgram, Joel Irwin. The Relationship Between the Measures of the Reflection Impulsivity Dimension of Cognitive Style and Visual Perception. (University of Maryland, 1969.) Dis. Abst. Int. 31A: 1081; Sept. 1970.

Miller, Charles K. The Relationship Between Piaget's Conservation Tasks and Selected Psycho-Educational Measures. (Temple University, 1969.) Dis. Abst. Int. 31A: 1081; Sept. 1970.

Miller, Daniel David. The Effect of Automated Marking on Sixth Graders Mathematics Achievement. (Arizona State University, 1970.) Dis. Abst. Int. 31A: 2740; Dec. 1970.

Miller, Donald Donavon. The Affective Influence of a Marking Machine on an Elementary Classroom. (Arizona State University, 1970.) Dis. Abst. Int. 31A: 2740-2741; Dec. 1970.

Miller, Harris Edgar. An Investigation of Organizational Climate as a Variable in Pupil Achievement Among 29 Elementary Schools in an Urban School District. (University of Minnesota, 1968.) Dis. Abst. 29A: 3387; Apr. 1969.

Miller, Isabel Maria. Construction and Evaluation of a Reasoning Test in Plane Geometry. (University of Colorado, 1963.) Dis. Abst. 24: 4586; May 1964.

Miller, Joe Hal. The Relationship Between School Mobility and Academic Achievement of Sixth Grade Students of Culturally Disadvantaged and Middle Socio-Economic Neighborhoods. (Indiana University, 1966.) Dis. Abst. 27A: 3231-3232; Apr. 1967.

Miller, Larry Harold. An Investigation of Children's Understanding of the Meanings and Operations in Arithmetic: School District Number 65, Evanston, Illinois. (Northwestern University, 1965.) Dis. Abst. 26: 3129; Dec. 1965.

Miller, Patricia Ann Hackney. Attention to Stimulus Dimensions in the Conservation of Liquid Quantity. (University of Minnesota, 1970.) Dis. Abst. Int. 31B: 6297; Apr. 1971.

Miller, Wayne Edgar. A Study of Amish Academic Achievement. (University of Michigan, 1969.) Dis. Abst. Int. 30A: 4197; Apr. 1970.

Miller, William Anton. The Acceptance and Recognition of Six Logical Inference Patterns by Secondary Students. (University of Wisconsin, Madison, 1968.) Dis. Abst. 29A: 1685-1686; Dec. 1968.

Milner, Stuart Dennis. The Effects of Teaching Computer Programming on Performance in Mathematics. (University of Pittsburgh, 1972.) Dis. Abst. Int. 33A: 4183-4184; Feb. 1973.

Minsky, Raphael. An Investigation Into Children's Conceptualization of Proportionality as Expressed in Their Drawings of the Male Human Figure. (University of Maryland, 1969.) Dis. Abst. Int. 31A: 1082; Sept. 1970.

Mitchell, Bruce Alex. The Effect of a Teacher-Developed Unit in Hyperbolic Geometry on Structural Objectives in Tenth Grade Geometry. (Ohio State University, 1972.) Dis. Abst. Int. 33A: 5978-5979; May 1973.

Mitchell, Charles, Jr. A Comparative Study of the Achievement Levels of Elementary School Children in the Areas of Reading and Mathematics in the Highland Park School System from 1961-1971. (Wayne State University, 1972.) Dis. Abst. Int. 33A: 6067; May 1973.

Mix, Harry Herman. An Examination of a Program Designed to Advance the Academic Progress of Underachieving Elementary School Pupils. (Columbia University, 1969.) Dis. Abst. Int. 30A: 3642-3643; Mar. 1970.

Moncrief, Michael Howard. A Validation Study of Selected Decision Rules Used in the Management of Student Progress Through an Individualized Mathematics System. (Florida State University, 1972.) Dis. Abst. Int. 33A: 4247; Feb. 1973.

Monk, Oliver Paul. A Study of Topics in College Preparatory Mathematics with Evaluation of the Use of a Manual in Matrix Algebra for In-Service Education. (University of Houston, 1966.) Dis. Abst. 27A: 985-986; Oct. 1966.

Montague, Margariete Ann. Use of Matrix Sampling Procedures with Selected Examinee and Item Populations to Assess Achievement in Mathematics. (University of Wisconsin, 1971.) Dis. Abst. Int. 32A: 5475; Apr. 1972.

Montemerlo, Melvin David. The Effects of Training and Ability on Conservation of Number. (Pennsylvania State University, 1970.) Dis. Abst. Int. 31A: 4555; Mar. 1971.

Montgomery, Mary Eleanor. The Interaction of Three Levels of Aptitude Determined by a Teach-Test Procedure with Two Treatments Related to Area. (University of Wisconsin, 1972.) Dis. Abst. Int. 33A: 4068-4069; Feb. 1973.

Montgomery, Robert Lawrence. A Study of Relationships Between Group Test of Creativity (GTOC) Scores and Achievement Test Scores of Students with Spanish and Non-Spanish Surnames. (University of Southern California, 1973.) Dis. Abst. Int. 34A: 3149; Dec. 1973.

Montgomery, Warren Guy. An Analysis and Appraisal of the Sioux City, Iowa, Secondary School Accelerated Mathematics Program. (University of South Dakota, 1968.) Dis. Abst. 29A: 2489-2490; Feb. 1969.

Moody, William Braun. An Investigation of the Relationship Between Fifth Grade Student and Teacher Performance on Selected Tasks Involving Non-Metric Geometry. (University of Maryland, 1968.) Dis. Abst. 29A: 1827; Dec. 1968.

Moore, Bobbie Dean. The Relationship of Fifth-Grade Students' Self-Concepts and Attitudes Toward Mathematics to Academic Achievement in Arithmetical Computation, Concepts, and Application. (North Texas State University, 1971.) Dis. Abst. Int. 32A: 4426; Feb. 1972.

Moore, Carolyn Chick. Selected Approaches and Activities to Enhance the Teaching of Certain Identified Areas of Difficulty in Primary School Mathematics. (University of Mississippi, 1969.) Dis. Abst. Int. 31A: 565; Aug. 1970.

Moore, Robert Ezra. The Mathematical Understanding of the Elementary School Teacher as Related to Pupil Achievement in Intermediate-Grade Arithmetic. (Stanford University, 1965.) *Dis. Abst.* 26: 213-214; July 1965.

Moray, Joseph. Effects of Curriculum Reform on Mathematics Achievement in Grade Six. (University of California, Berkeley, 1967.) *Dis. Abst.* 28A: 4538; May 1968.

Morgan, James Hurley. The Relationship Between Levels of Anxiety and Mathematics Achievement in Programed and Teacher-Directed Instruction. (University of Connecticut, 1965.) *Dis. Abst.* 26: 3760; Jan. 1966.

Morrell, James E. A Comparison of Four Methods of Instructional Teacher Feedback from Practice Worksheets in Fifth Grade Arithmetic. (Lehigh University, 1970.) *Dis. Abst. Int.* 31A: 2794; Dec. 1970.

Morrison, Grant Albert, Jr. An Analysis of Academic Achievement Trends for Anglo-American, Mexican-American, and Negro-American Students in a Desegregated School Environment. (University of Houston, 1972.) *Dis. Abst. Int.* 33A: 6024-6025; May 1973.

Morrison, Roderick Ruel, Jr. A Study of the Effects of Departmental Organization on Academic Achievement in the Sixth and Seventh Grades. (University of Georgia, 1966.) *Dis. Abst.* 27A: 3270-3271; Apr. 1967.

Morrison, Shirley L. Instructional Expenditures and Learning Performance of Third Graders in New York State. (Fordham University, 1973.) *Dis. Abst. Int.* 34A: 2175; Nov. 1973.

Mortlock, Roland Sidney. Provision for Individual Differences in Eleventh Grade Mathematics Using Flexible Grouping Based on Achievement of Behavioral Objectives: An Exploratory Study. (University of Michigan, 1969.) *Dis. Abst. Int.* 30A: 3643; Mar. 1970.

Mowbray, John Smart. An Investigation of a Coder Training System for Mathematics Textbook Analysis. (University of Pittsburgh, 1970.) *Dis. Abst. Int.* 31A: 6475; June 1971.

Moxley, Roy Anthony, Jr. A Program for Reducing Reversals of Digits and Symbols Produced by Kindergarten Children. (University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 2192-2193; Nov. 1970.

Muckey, Roy William. Using Decimal and Non-Decimal Numeration Systems to Effect Change in the Ability of Beginning Second Grade Students to Add and Subtract in Different Bases. (University of Minnesota, 1971.) *Dis. Abst. Int.* 32B: 3510; Dec. 1971.

Mueller, Siegfried Gene. A Comparison of Two Programmed Methods of Teaching Measurement Conversion to Fifth and Sixth Grade Children of the Middle and Lower Socio-Economic Classes. (Southern Illinois University, 1968.) Dis. Abst. 29A: 3336; Apr. 1969.

Muktarian, Herbert H. A Study of Development of Conservation of Quantity. (Ohio State University, 1966.) Dis. Abst. 27B: 2508-2509; Jan. 1967.

Mullen, Whitney Paul. An Evaluation of Quantitative Physical Science: An Equipment-Based Ninth-Grade Course in Physical Science. (Duke University, 1970.) Dis. Abst. Int. 31A: 5224; Apr. 1971.

Mullenex, James Lee. A Study of the Understanding of Probability Concepts by Selected Elementary School Children. (University of Virginia, 1968.) Dis. Abst. 29A: 3920; May 1969.

Mundy, Michael Jerome. An Analysis of an Academically Structured Head Start Program for: (1) Geographic, (2) Academic Treatment, and (3) High-Low Subject Ability Variables. (Auburn University, 1973.) Dis. Abst. Int. 34A: 2395; Nov. 1973.

Murray, Frank Brush. Some Factors Related to the Conservation of Illusion-Distorted Length by Primary School Children. (Johns Hopkins University, 1966.) Dis. Abst. 27A: 3320; Apr. 1967.

Murray, John P. Social Learning and Cognitive Development: Modeling Effects on Children's Understanding of Conservation. (Catholic University of America, 1970.) Dis. Abst. Int. 31B: 3030; Nov. 1970.

Mwaniki, Mebo Kabeta. The Relationship Between Self-Concept and Academic Achievement in Kenyan Pupils. (Stanford University, 1973.) Dis. Abst. Int. 34A: 1138; Sept. 1973.

Myers, Robert Harold, Jr. The Role of the Axiomatic Method in Secondary School Mathematics. (Harvard University, 1972.) Dis. Abst. Int. 33A: 665-666; Aug. 1972.

Myrick, Alvin Grant. Some Effects of Space Science Materials Upon Student Achievement in Mathematics. (Duke University, 1969.) Dis. Abst. Int. 30B: 3757; Feb. 1970.

Nabors, Cecil Thomas. The Effect of Individualized Verbal Problem Assignments on the Mathematical Achievement of Fifth-Grade Students. (University of Houston, 1968.) Dis. Abst. 29A: 1168; Oct. 1968.

Nagel, Thomas Scott. A Descriptive Study of Cognitive and Affective Variables Associated with Achievement in a Computer-Assisted Instruction Learning Situation. (Michigan State University, 1969.) Dis. Abst. Int. 30A: 5295; June 1970.

Namkin, Sidney. The Stability of Achievement Test Scores: A Longitudinal Study of the Reading and Arithmetic Subtests of the Stanford Achievement Test. (Rutgers, The State University, 1966.) Dis. Abst. 27A: 398-399; Aug. 1966.

Napier, Toy Lee. A Comparison of a Team and a Non-Team Method of Teaching Algebra I to Ninth Grade Students Who Were Low Achievers in Eighth Grade Mathematics. (University of Arkansas, 1970.) Dis. Abst. Int. 31B: 4206-4207; Jan. 1971.

Nealeigh, Thomas Richard. Development and Validation of a Non-Verbal Attitude and Achievement Index for Mathematics. (Ohio State University, 1967.) Dis. Abst. 28A: 3567; Mar. 1968.

Neatrour, Charles Raymond. Geometric Content in the Mathematics Curriculum of the Middle School. (Indiana University, 1968.) Dis. Abst. 29A: 3531-3532; Apr. 1969.

Needleman, Joan Rines. Scalogram Analysis of Certain Area Concepts Proposed by Piaget. (Boston University School of Education, 1970.) Dis. Abst. Int. 31B: 3030-3031; Nov. 1970.

Neel, Thomas Edward. An Evaluation of a Pontoon Transitional Design--Seventh Grade Average Ability Level Students. (University of Southern California, 1971.) Dis. Abst. Int. 33A: 959; Sept. 1972.

Neil, Marilyn Sprouse. A Study of the Performance of Third Grade Children on Two Types of Verbal Arithmetic Problems. (University of Alabama, 1968.) Dis. Abst. 29A: 3337; Apr. 1969.

Neill, Robert Dudley. The Effects of Selected Teacher Variables on the Mathematics Achievement of Academically Talented Junior High School Pupils. (Columbia University, 1966.) Dis. Abst. 27A: 997-998; Oct. 1966.

Nelson, Barbara Ann. Effects of the Analytic-Global and Reflectivity-Impulsivity Cognitive Styles on the Acquisition of Geometry Concepts Presented Through Emphasis or No Emphasis and Discovery or Expository Lessons. (University of Wisconsin, 1972.) Dis. Abst. Int. 33A: 4949; Mar. 1973.

Nelson, Leonard Theodore. The Relationship Between Verbal, Visual-Spatial, and Numerical Abilities and the Learning of the Mathematical Concept of Function. (University of Michigan, 1968.) Dis. Abst. Int. 30A: 218; July 1969.

Nelson, Nancy Zebraskey. The Effect of the Teaching of Estimation on Arithmetic Achievement in the Fourth and Sixth Grades. (University of Pittsburgh, 1966.) Dis. Abst. 27A: 4172; June 1967.

Nelson, Norman Neibuhr. A Survey of the Status of Probability and Statistics in the Public Secondary Schools of Colorado. (University of Northern Colorado, 1970.) Dis. Abst. Int. 31A: 4041; Feb. 1971.

Nelson, Robert John. An Investigation of a Group Test Based on Piaget's Concepts of Number and Length Conservation and Its Ability to Predict First-Grade Arithmetic Achievement. (Purdue University, 1969.) Dis. Abst. Int. 30A: 3644; Mar. 1970.

Neufeld, K. Allen. Differences in Personality Characteristics Between Groups Having High and Low Mathematical Achievement Gain Under Individualized Instruction. (University of Wisconsin, 1967.) Dis. Abst. 28A: 4540; May 1968.

Neuhouser, David Lee. A Comparison of Three Methods of Teaching a Programed Unit on Exponents to Eighth Grade Students. (Florida State University, 1964.) Dis. Abst. 25: 5027; Mar. 1965.

Neujahr, James Lloyd. An Analysis of Teacher-Pupil Interactions When Instruction is Individualized. (Columbia University, 1970.) Dis. Abst. Int. 31A: 4041; Feb. 1971.

Neville, Mary C. A Study of the Major Events That Influenced the Introduction of Modern Mathematics Curricula in Selected Primary Schools in Zambia. (American University, 1972.) Dis. Abst. Int. 33A: 2082; Nov. 1972.

Newberg, Philip Frederick. School Achievement and Perceptual and Behavioral Development in Treated Phenylketonurics and Children with Learning Disabilities. (University of Southern California, 1970.) Dis. Abst. Int. 33A: 622; Aug. 1972.

Newmark, Gerald. The Relationship Between Student Characteristics and Work Rate and Between Work Rate and Performance in Programmed Instruction with Two Different Subject Matter Fields. (University of Southern California, 1970.) Dis. Abst. Int. 31A: 1146; Sept. 1970.

Newstat, Steven. A Study of the Relationships Between Sociocultural Variables and Geometric Problem Solving Performances of Disadvantaged Children. (Michigan State University, 1972.) Dis. Abst. Int. 33A: 6069; May 1973.

Nibbelink, William Henry. The Use of an Anecdotal Style of Content Presentation as a Motivational and Instructional Device for Seventh Grade Under-Achievers in Mathematics. (Ohio State University, 1971.) Dis. Abst. Int. 32A: 3815; Jan. 1972.

Nicely, Robert Francis. Development of Procedures for Analyzing Materials for Instruction in Complex Numbers at the Secondary Level. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 2262; Nov. 1970.

Nichols, Edith June. A Comparison of Two Methods of Instruction in Multiplication and Division for Third-Grade Pupils. (University of California, Los Angeles, 1971.) Dis. Abst. Int. 32A: 6011; May 1972.

Nichols, Lois K. Language as a Facilitating Factor in the Ability to Achieve Conservation of Number. (State University of New York at Albany, 1972.) Dis. Abst. Int. 33A: 2822; Dec. 1972.

Nickel, Anton Peter. A Multi-Experience Approach to Conceptualization for the Purpose of Improvement of Verbal Problem Solving in Arithmetic. (University of Oregon, 1971.) Dis. Abst. Int. 32A: 2917-2918; Dec. 1971.

Niederkorn, Robert Henry. Assessing Relative Effectiveness of Standardized and Experimental Tests in Measuring Mathematics Achievement in Selected Fifth Grades. (University of Montana, 1971.) Dis. Abst. Int. 32A: 2314-2315; Nov. 1971.

Niland, Thomas Martin. A Utilization of Rotter's Social Learning Theory to Lower Minimal Goal Discrepancies of Elementary School Children. (State University of New York at Buffalo, 1969.) Dis. Abst. Int. 30A: 1826-1827; Nov. 1969.

Nix, George Carol. An Experimental Study of Individualized Instruction in General Mathematics. (Auburn University, 1969.) Dis. Abst. Int. 30A: 3367-3368; Feb. 1970.

Nixon, Betty Lou Knapp. An Evaluation of the Educational Program as Implemented in a Transitional School in the Northern Section of New Jersey. (West Virginia University, 1970.) Dis. Abst. Int. 31A: 6285; June 1971.

Norland, Charles R. Mathematics Achievement: Changes in Achievement Scores for Grades Six and Eight After Instruction in Modern Mathematics Programs for Four Years or More, 1969. (Northern Illinois University, 1971.) Dis. Abst. Int. 32A: 2363; Nov. 1971.

Norris, Fletcher Ragland. Pupil Achievement as a Function of an Inservice Training Program on Mathematics Concepts for Sixth Grade Teachers. (George Peabody College for Teachers, 1968.) Dis. Abst. Int. 30A: 1054; Sept. 1969.

Northcutt, Mary Palmer. The Comparative Effectiveness of Classroom and Programmed Instruction in Teaching of Decimals to Fifth Grade Students. (George Peabody College for Teachers, 1963.) Dis. Abst. 24: 5091-5092; June 1964.

Norton, William Arnold. A Study to Determine the Effects of Loudness and Type of Music on Figural and Verbal Creative, Reading Coding, and Arithmetic Computation Tasks. (University of Georgia, 1971.) Dis. Abst. Int. 32A: 5044-5045; Mar. 1972.

Noto, Edward Ronald. A Comparison Between Traditional Teaching and Interdisciplinary Team Teaching at the Seventh Grade Level. (St. Louis University, 1972.) Dis. Abst. Int. 33A: 905; Sept. 1972.

Nowak, Betty Adams. A Study to Compare the Effects of Mathematics Laboratory Experiences of Intermediate-Grade Students on Achievement and Attitudes. (Brigham Young University, 1972.) Dis. Abst. Int. 33A: 2697; Dec. 1972.

Nowak, Stanley Marion. The Development and Analysis of the Effects of an Instructional Program Based on Piaget's Theory of Classification. (State University of New York at Buffalo, 1969.) Dis. Abst. Int. 30A: 1875; Nov. 1969.

Nowell, Willis Cullen. The Effectiveness of the Learning Resource Teacher as a Treatment Component of Elementary and Secondary Education Act, Title I, Programs for Culturally Disadvantaged Children. (University of Tennessee, 1969.) Dis. Abst. Int. 30A: 3198-3199; Feb. 1970.

Nowka, Roberta Faye. An Analysis of Achievement and Self-Concept Scores of the Seventh and Eighth Grade Students at the Concho School 1968-1970. (Oklahoma State University, 1971.) Dis. Abst. Int. 33A: 574-575; Aug. 1972.

Nuhfer, Thomas Harry. Individual Enrichment in Mathematics Utilizing Three Modes of Instruction: A Comparison Involving Advanced High School and Lower Division College Students. (State University of New York at Buffalo, 1971.) Dis. Abst. Int. 32A: 2554; Nov. 1971.

Nyeste, Rev. John Joseph. An Evaluation of Unasex Grouping in the Fourth Grade. (West Virginia University, 1972.) Dis. Abst. Int. 33A: 6027; May 1973.

Oakes, Herbert Irving. Objectives of Mathematics Education in the United States from 1920 to 1960. (Columbia University, 1965.) Dis. Abst. 26: 908; Aug. 1965.

Oakley, Donald Lilly. An Investigation of the Quantitatively Analytic Cognitive Style of Ninth Grade Students. (Cornell University, 1971.) Dis. Abst. Int. 32A: 6826; June 1972.

Oates, Stanton Caltham. A Study Comparing the Auto-Elucidative Method with a Linear Program. (University of Southern California, 1966.) Dis. Abst. 27A: 998; Oct. 1966.

O'Brien, Thomas C. An Experimental Investigation of a New Approach to the Teaching of Decimals. (New York University, 1967.) Dis. Abst. 28A: 4541-4542; May 1968.

O'Connell, Richard H. A Diffusion Model for the COLAMDA Project in Colorado. (University of Denver, 1971.) Dis. Abst. Int. 32A: 3627; Jan. 1972.

O'Connell, William B., Jr. An Investigation of the Value of Exposing Slow-Learner Ninth Year Mathematics Pupils to a Relatively Short Computer Experience. (University of Rochester, 1973.) Dis. Abst. Int. 34A: 124-125; July 1973.

O'Daffer, Phares Glyn. An Exploratory Study of the Abilities of Fifth and Seventh Grade Mathematics Students to Learn Finite Group Properties and Structures. (University of Illinois, 1968.) Dis. Abst. Int. 30A: 219; July 1969.

O'Donnell, John Raymond. Academic Achievement of the Secondary Educable Mentally Handicapped Student. (University of Southern California, 1973.) Dis. Abst. Int. 33A: 6756-6757; June 1973.

Offir, Joseph. Some Mathematical Models of Individualized Differences in Learning and Performance. (Stanford University, 1971.) Dis. Abst. Int. 32A: 795; Aug. 1971.

O'Flaherty, Helen T. The Developmental Significance of Pictorial Representation in Problem Solving. (Fordham University, 1971.) Dis. Abst. Int. 32B: 2382; Oct. 1971.

O'Hare, Sister Mary Gregory. Concept Formation in Children with Down's Syndrome (Mongolism). (Fordham University, 1966.) Dis. Abst. 27B: 2143; Dec. 1966.

Oles, Henry John. Factors Associated with Self-Scoring Behavior in Students Using Individually Prescribed Instruction. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 3796; Jan. 1972.

Olesini, Jose. The Effect of Bilingual Instruction on the Achievement of Elementary Pupils. (East Texas State University, 1971.) Dis. Abst. Int. 32A: 4844-4845; Mar. 1972.

Olsen, Glenn William. The Development and Analysis of a Hierarchy of Learning Tasks Involved in the Concept of Slope. (Cornell University, 1968.) Dis. Abst. 29A: 4334; June 1969.

Olson, Alton Thorpe. High School Plane Geometry Through Transformations: An Exploratory Study. (University of Wisconsin, 1970.) Dis. Abst. Int. 31A: 5944; May 1971.

Olson, Arthur H. The Relationship Between Achievement Motivation of Students and Their Academic Achievement During the High School Years. (Northern Illinois University, 1972.) Dis. Abst. Int. 33A: 4248-4249; Feb. 1973.

Olson, Franklin Carl. The Effects of Pair Study on Student Attitude and Achievement in Plane Geometry. (University of Nebraska, 1971.) *Dis. Abst. Int.* 32A: 840-841; Aug. 1971.

O'Neill, Jane Anne. An Analysis on Selected Variables of the Effect of a Systems Approach to Teaching Specific Mathematical Skills to Fifth Grade Students from a Disadvantaged Area. (University of Connecticut, 1970.) *Dis. Abst. Int.* 31A: 6286; June 1971.

Oner, Necla Palamutlu. Impact of Teacher Behavior and Teaching Technique on Learning by Anxious Children. (University of Minnesota, 1971.) *Dis. Abst. Int.* 32A: 6215; May 1972.

Onorevole, Richard Emil. A Study of the Effectiveness of Having Middle-Grade Arithmetic Students Rewrite Programed Questions in Their Own Words Prior to Making a Response. (Columbia University, 1970.) *Dis. Abst. Int.* 31A: 3366; Jan. 1971.

Opper, Phyllis Sylvia. Intellectual Development in Thai Children. (Cornell University, 1971.) *Dis. Abst. Int.* 32A: 4846; Mar. 1972.

Ordonez, Josefina Maniago. School-Related Attitudes of Title I Children in the District of Columbia Public Schools. (George Washington University, 1971.) *Dis. Abst. Int.* 32A: 1196; Sept. 1971.

Osborn, Kenneth Hugh. A Longitudinal Study of Achievement in and Attitude Toward Mathematics of Selected Students Using School Mathematics Study Group Materials. (University of California, Berkeley, 1965.) *Dis. Abst.* 26: 7119; June 1966.

Osborne, Alan Reid. The Effects of Two Instructional Approaches on the Understanding of Subtraction by Grade Two Pupils. (University of Michigan, 1966.) *Dis. Abst.* 28A: 158; July 1967.

Ostheller, Karl Olney. The Feasibility of Using Computer-Assisted Instruction to Teach Mathematics in the Senior High School. (Washington State University, 1970.) *Dis. Abst. Int.* 31A: 4042; Feb. 1971.

Otaala, Barnabas. The Development of Operational Thinking in Primary School Children: An Examination of Some Aspects of Piaget's Theory Among the ITESO Children of Uganda. (Columbia University, 1971.) *Dis. Abst. Int.* 32A: 796; Aug. 1971.

Ottina, John Renaldo. The Effects of Delay in Knowledge of Results on the Amount Learned in Teaching Machine Programs of Differing Cue Content. (University of Southern California, 1964.) *Dis. Abst.* 25: 1753; Sept. 1964.

Overholt, Elbert David. An Investigation of Elementary Students' Achievement in Arithmetic as Related to the Attainment of the Concept of Conservation of Substance. (University of Kansas, 1964.) Dis. Abst. 25: 5795; Apr. 1965.

Owens, Douglas Timothy. The Effects of Selected Experiences on the Ability of Disadvantaged Kindergarten and First Grade Children to Use Properties of Equivalence and Order Relations. (University of Georgia, 1972.) Dis. Abst. Int. 33A: 5042; Mar. 1973.

Pace, Raymond Elwood. The Effects of Tangible Reinforcement on the Efficiency in Which E. M. R. Pupils Memorize Selected Multiplication Facts. (Brigham Young University, 1967.) Dis. Abst. 28A: 2100-2101; Dec. 1967.

Pack, Elbert Chandler. The Effect of Mode of Computer-Operation on Learning a Computer Language and on Problem Solving Efficiency of College Bound High School Students. (University of California, Los Angeles, 1970.) Dis. Abst. Int. 31A: 6477; June 1971.

Page, Robert Leroy. An Experiment to Compare the Effectiveness of Instruction Versus Discovery in Generalizing the Strategy of a Simple Game. (Florida State University, 1970.) Dis. Abst. Int. 31A: 4628-4629; Mar. 1971.

Paige, Donald Dean. A Comparison of Team Versus Traditional Teaching of Junior High School Mathematics. (Indiana University, 1966.) Dis. Abst. 27A: 1717-1718; Dec. 1966.

Palmer, Henry Benjamin Abiodun. Indicating Essentials of Secondary School Algebra: A Comparative Analysis of British, United States and Entebbe Programs. (University of Southern California, 1967.) Dis. Abst. 28A: 4542-4543; May 1968.

Palow, William Paul. A Study of the Ability of Public School Students to Visualize Particular Perspectives of Selected Solid Figures. (University of Florida, 1969.) Dis. Abst. Int. 31A: 78-79; July 1970.

Palzere, Donald Edward. An Analysis of the Effects of Verbalization and Nonverbalization in the Learning of Mathematics. (University of Connecticut, 1967.) Dis. Abst. 28A: 3034-3035; Feb. 1968.

Pamboukian, Benjamin. An Investigation of the Development of Creative Behavior and Its Relationship to Achievement in Mathematics. (State University of New York at Buffalo, 1972.) Dis. Abst. Int. 33A: 1039-1040; Sept. 1972.

Pang, Morris Soo Young. An Analysis of a Structure of Mathematics Directed Toward a Reflective Procedure for Learning Mathematics. (Colorado State College, 1968.) Dis. Abst. 29A: 1168-1169; Oct. 1968.

Pang, Paul Hau-lim. A Mathematical and Pedagogical Study of Square Root Extraction. (State University of New York at Buffalo, 1969.) Dis. Abst. Int. 30A: 1080 Sept. 1969.

Papalia, Diane Ellen. The Status of Some Conservation Abilities Across the Life-Span. (West Virginia University, 1971.) Dis. Abst. Int. 32B: 4901; Feb. 1972.

Paquette, Gerard Arthur. Toward a Theory of Sequencing: Study 1-3: An In-Depth Exploration of the Role of Iconic Representations in the Study of Congruence of Triangles. (Pennsylvania State University, 1971.) Dis. Abst. Int. 32A: 6215-6216; May 1972.

Paris, John August. The Relation of a Personality Trait and Game Conditions to Participant Learning. (Syracuse University, 1970.) Dis. Abst. Int. 32A: 102; July 1971.

Parker, DeAnsin Goodson. The Effects of Method of Hierarchical Organization and Sequence on Children's Learning. (Columbia University, 1973.) Dis. Abst. Int. 34A: 3036-3037; Dec. 1973.

Parvand, Mohammad H. A Study of Children's Acquisition of Piagetian Concepts. (Ohio State University, 1971.) Dis. Abst. Int. 32A: 3671; Jan. 1972.

Passi, Sneh Lata. An Examination of the Cognitive Processes Fostered by the Content of Selected Elementary School Mathematics Series. (State University of New York at Buffalo, 1970.) Dis. Abst. Int. 31A: 1516; Oct. 1970.

Pate, Robert Thomas. A Study of Transactional Pattern Differences Between School Mathematics Study Group Classes and Traditional Mathematics Classes. (University of Oklahoma, 1964.) Dis. Abst. 25: 3442-3443; Dec. 1964.

Patterson, William Henry, Jr. The Development and Testing of a Discovery Strategy in Mathematics Involving the Field Axioms. (Florida State University, 1969.) Dis. Abst. Int. 30B: 5599; June 1970.

Pattison, Sylvia Jean. Evaluation as a Fundamental Part of Curriculum Development: A Study of Teaching Concepts of Estimation and Measurement to First-Grade Children. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 34A: 560-561; Aug. 1973.

Paul, Oliver Daye. The Relationship of Student-Teacher Compatibility on Student Achievement in Algebra. (Auburn University, 1973.) Dis. Abst. Int. 34A: 1180; Sept. 1973.

Paull, Duane Rodney. The Ability to Estimate in Mathematics. (Columbia University, 1971.) Dis. Abst. Int. 32A: 3567; Jan. 1972.

Payne, Holland Ivan. A Study of Student Achievement Using SMSG and Conventional Approaches in First Year Algebra. (Oklahoma State University, 1963.) Dis. Abst. 25: 4481; Feb. 1965.

Payne, John Finley, Jr. An Experimental Study on the Effectiveness of Instruction in Mental Computation in Grade V. (Research Study No. 1). (Colorado State College, 1966.) Dis. Abst. 27A: 608-609; Sept. 1966.

Pearl, Andrew Wilder. A Study of the Effects on Students' Achievement and Attitudes When They Work in Academic Teams of Three Members. (Cornell University, 1967.) Dis. Abst. 28A: 59-60; July 1967.

Peck, Lawrence Keith. The Effect of Two Geometric Instructional Paradigms in Grades Four, Six, and Eight. (University of Missouri-Columbia, 1970.) Dis. Abst. Int. 31A: 3787-3788; Feb. 1971.

Pedee, Richard Douglas. The Relative Effects of Differentiated Staffing on Elementary School Student Achievement in Beaverton Public Schools. (University of Oregon, 1971.) Dis. Abst. Int. 32A: 6110-6111; May 1972.

Peglar, Marian. A Comparison of Operational Seriation of Lengths and Weights in Piagetian Tasks. (Iowa State University, 1969.) Dis. Abst. Int. 30B: 5227; May 1970.

Pendleton, Julienne Marie Kesmodel. Mathematical Concept Attainment of Sixth Grade Students in Relation to Their Cognitive Styles. (University of Texas at Austin, 1972.) Dis. Abst. Int. 33A: 5043; Mar. 1973.

Penner, Herbert Dwayne. An Analysis of Using an Individual Progress Approach to the Teaching of Trigonometry in the Omaha, Nebraska, Public High Schools. (University of Nebraska, 1972.) Dis. Abst. Int. 33A: 1421; Oct. 1972.

Penner, William James. Effects of Cue Word Form Class on the Solving of Arithmetic Word Problems by the Mentally Handicapped. (University of Connecticut, 1973.) Dis. Abst. Int. 34A: 2424-2425; Nov. 1973.

Pennington, Barbara Anne. Behavioral and Conceptual Strategies as Decision Models for Solving Problems. (University of California, Los Angeles, 1970.) Dis. Abst. Int. 31A: 1630-1631; Oct. 1970.

Peper, John Benjamin. A Predictive Study of the Relationship Between Status and Achievement in Elementary Units of Urban, Suburban, Rural Farm and Rural Non-Farm School Districts. (Temple University, 1970.) Dis. Abst. Int. 31A: 5092; Apr. 1971.

Perciante, Terence Hugh. The Influence of Visual Perception upon the Development of Geometrical Concepts. (State University of New York at Buffalo, 1973.) Dis. Abst. Int. 33A: 5560; Apr. 1973.

Perrin, Jerry Dale. A Statistical and Time Change Analysis of Achievement Differences of Children in a Nongraded and a Graded Program in Selected Schools in the Little Rock Public Schools. (University of Arkansas, 1969.) Dis. Abst. Int. 30A: 530; Aug. 1969.

Perry, Joyce Marlene. Correlates of Teacher Prediction for Student Success Six Years Beyond Sixth Grade. (University of Illinois, 1966.) Dis. Abst. 27A: 2012; Jan. 1967.

Peskin, Anne Stern. Teacher Understanding and Attitude and Student Achievement and Attitude in Seventh Grade Mathematics. (New York University, 1964.) Dis. Abst. 26: 3983-3984; Jan. 1966.

Peters, Donald Louis. Piaget's Conservation of Number: The Interaction of Language Comprehension and Analytic Style with Three Methods ~~of~~ Training. (Stanford University, 1968.) Dis. Abst. 29A: 3878-3879; May 1969.

Peters, Glenn Eugene. An Analysis of Factors for Effective Learning in an Auto-Instructional Program in Space Perception. (University of New Mexico, 1963.) Dis. Abst. 24: 3234-3235; Feb. 1964.

Peterson, Gary Davis. The Preparation, Administration, and Interpretation of an Achievement Test in Geometry for Fourth, Fifth, and Sixth Grades. (University of Kansas, 1973.) Dis. Abst. Int. 34A: 3242; Dec. 1973.

Peterson, John Charles. Effect of Exploratory Homework Exercises Upon Achievement in Eighth Grade Mathematics. (Ohio State University, 1969.) Dis. Abst. Int. 30A: 4339; Apr. 1970.

Peterson, John Milo. A Comparison of Achievement in Traditional Mathematics Skills of Seventh Grade Students Using Three Different Types of Materials--Traditional, Transitional, and Modern. (Utah State University, 1966.) Dis. Abst. 27B: 2790-2791; Feb. 1967.

Pettis, Rufus Grier. An Analysis of the Methods Being Used to Make Provisions for Outstanding High School Mathematics Students in North Carolina. (Oklahoma State University, 1970.) Dis. Abst. Int. 31A: 5798-5799; May 1971.

Pfaeffle, Heinz. A Comparison of Two Educational Programs for Beginning Instruction with Educable Mentally Retarded Pupils. (University of Wisconsin, 1969.) Dis. Abst. Int. 30A: 174-175; July 1969.

Phelps, Jack. A Study Comparing Attitudes Toward Mathematics of SMSG and Traditional Elementary School Students. (Oklahoma State University, 1963.) Dis. Abst. 25: 1052; Aug. 1964.

Phillips, Darrell Gordon. An Investigation of Possible Hierarchical Dependency of Four Piaget-Type Tasks Under Two Methods of Presentation to Third-, Fifth-, and Seventh-Grade Children. (Florida State University, 1967.) Dis. Abst. 28A: 2564; Jan. 1968.

Phillips, Ernest Ray. Validating Learning Hierarchies for Sequencing Mathematical Tasks. (Purdue University, 1971.) Dis. Abst. Int. 32A: 4249; Feb. 1972.

Phillips, John Durwood. The Relationship Between Selected Piagetian Tasks and Knowledge of the Content Areas in Fifth-Grade Children. (East Texas State University, 1972.) Dis. Abst. Int. 33A: 6778; June 1973.

Phillips, Robert Bass, Jr. Teacher Attitude as Related to Student Attitude and Achievement in Elementary School Mathematics. (University of Virginia, 1969.) Dis. Abst. Int. 30A: 4316-4317; Apr. 1970.

Phillips, William Desmond. The Influence of Preschool Training on Achievement in Language Arts, Arithmetic Concepts, and Socialization of Young Deaf Children in Residential Schools. (Columbia University, 1963.) Dis. Abst. 24: 5223-5224; June 1964.

Piatt, Robert George. An Investigation of the Effect the Training of Teachers in Defining, Writing and Implementing Educational Behavioral Objectives Has on Learner Outcomes for Students Enrolled in a Seventh Grade Mathematics Program in the Public Schools. (Lehigh University, 1969.) Dis. Abst. Int. 30A: 3352; Feb. 1970.

Pickering, Charles Thomas. A Study of Intellectual Abilities of Culturally Disadvantaged Children as Predictors of Achievement in Reading, Mathematics, and Listening in Grade One. (Ohio University, 1969.) Dis. Abst. Int. 31A: 1085; Sept. 1970.

Pickering, Marjorie A. Premo. An Investigation of Children's Learning of Some Concepts and Principles Which Enable Them to Perform Examples of Addition of Common Fractions. (Michigan State University, 1968.) Dis. Abst. 29A: 3533; Apr. 1969.

Pieters, Gerald Ross. Pictorial Rote Learning as a Predictor of Remedial Academic Criteria. (Southern Illinois University, 1968.) Dis. Abst. 29B: 3123; Feb. 1969.

Pigge, Fred Lee. An Experimental Comparison of Three Methods of Teaching Addition and Subtraction of Fractions in Grade Five. (Ohio University, 1964.) Dis. Abst. 25: 1789-1790; Sept. 1964.

Pinegar, Rex Dee. A Comparison of a Conventional Teaching Technique with a Programed Instruction Technique as Applied to Teaching Basic Arithmetic Addition and Subtraction Combinations to Normal and Educable Mentally Retarded Boys. (University of Southern California, 1967.) Dis. Abst. 28A: 3571; Mar. 1968.

Pinker, Aron. An Experimental Course on the Calculus of Finite Differences. (Columbia University, 1969.) Dis. Abst. Int. 30B: 2803; Dec. 1969.

Pittman, Robert Fred. An Examination of Objectives for Learning Centers. (Northern Illinois University, 1970.) Dis. Abst. Int. 31A: 2795; Dec. 1970.

Platt, John Lewis. The Effect of the Use of Mathematical Logic in High School Geometry: An Experimental Study. (Colorado State College, 1967.) Dis. Abst. 28A: 4544-4545; May 1968.

Plummer, Sister Mary Jean. The Effect of Preschool Experience on Spatial Perception. (University of Cincinnati, 1971.) Dis. Abst. Int. 32A: 4493-4494; Feb. 1972.

Plunkett, Betty Kiser. Symbol-Referent Discrimination by Fourth Grade Students. (University of Illinois, 1967.) Dis. Abst. 28A: 4957; June 1968.

Podojil, Louis Frances. The Relationship Between Level of Aspiration and Change in Mathematical Interests and Attitudes Among Seventh Grade Students. (Kent State University, 1971.) Dis. Abst. Int. 32A: 5046; Mar. 1972.

Poggio, John Paul. Prediction of Mathematics Achievement at the Sixth Grade Level Employing Selected Personality Characteristics of Students and Their Teachers. (Boston College, 1972.) Dis. Abst. Int. 33A: 6240-6241; May 1973.

Polmatier, Richard John. An Investigation of the Relationship of Conceptual Tempo and the Ability to Achieve Conservation. (Auburn University, 1972.) Dis. Abst. Int. 33A: 1027; Sept. 1972.

Portis, Theodore Roosevelt. An Analysis of the Performances of Fourth, Fifth and Sixth Grade Students on Problems Involving Proportions, Three Levels of Aids and Three I.Q. Levels. (Indiana University, 1972.) Dis. Abst. Int. 33A: 5981-5982; May 1973.

Posamentier, Alfred S. Mathematical Achievement and Attitudinal Differences Among Students and Attitudinal Differences Among Teachers Under a Two-Semester and a Three-Semester Elementary Algebra Course. (Fordham University, 1973.) Dis. Abst. Int. 34A: 2279-2280; Nov. 1973.

Possien, Wilma Martens. A Comparison of the Effects of Three Teaching Methodologies on the Development of the Problem-Solving Skills of Sixth Grade Children. (University of Alabama, 1964.) Dis. Abst. 25: 4003; Jan. 1965.

Post, Thomas Robert. The Effects of the Presentation of a Structure of the Problem-Solving Process Upon Problem-Solving Ability in Seventh Grade Mathematics. (Indiana University, 1967.) Dis. Abst. 28A: 4545; May 1968.

Poteet, James Allen. Identification Classification and Characteristics of First Grade Students with Learning Disabilities in Reading, Writing and Mathematics. (Purdue University, 1970.) Dis. Abst. Int. 31A: 3994; Feb. 1971.

Potts, Floyd. An Investigation of Selected Individual Difference Variable in Programmed Instruction. (Harvard University, 1967.) Dis. Abst. 29A: 4388; June 1969.

Prater, Mildred Juanita. Color Uses in Primary Instructional Materials and Possible Implications for Color Deficient Children. (George Peabody College for Teachers, 1967.) Dis. Abst. 29A: 72-73; July 1968.

Prentice, Marion Claire. The Effects of Variations in Task Difficulty, Materials, and Instructions on Children's Capacity to Seriate. (Cornell University, 1963.) Dis. Abst. 24: 3854-3855; Mar. 1964.

Price, Jack Stanley. Discovery: Its Effect on the Achievement and Critical Thinking Abilities of Tenth Grade General Mathematics Students. (Wayne State University, 1965.) Dis. Abst. 26: 5304-5305; Mar. 1966.

Prichard, Paul Newton. The Effects of Desegregation on Selected Variables in the Chapel Hill City School System. (University of North Carolina at Chapel Hill, 1969.) Dis. Abst. Int. 30A: 3697; Mar. 1970.

Prielipp, Robert Walter. The Effect of Textbook, Sex, and Setting of the Problem on the Ability of First Year Algebra Students to Recognize Three Properties of an Abelian Group. (University of Wisconsin, 1967.) Dis. Abst. 28A: 4545-4546; May 1968.

Prindeville, Ann Catherine. A Program for Teaching Selected Mathematics Concepts to First-Grade Children Using Manipulanda, Language Training and the Tutor-Tutee Relationship. (University of California, Los Angeles, 1971.) Dis. Abst. Int. 32A: 6111; May 1972.

Pritchett, Edward Milo. An Instrument of Measurement to Appraise the Arithmetic Abilities of Educable Mentally Retarded Children Ages Six Through Nine. (Research Study No. 1). (Colorado State College, 1965.) Dis. Abst. 26: 7120; June 1966.

Pro, Frank J., Jr. An Investigation of the Counselor's Role with Diagnostic Testing and a Related Teacher Workshop with Junior High School Mathematics Classes in the Gateway School District. (University of Pittsburgh, 1971.) Dis. Abst. Int. 32A: 6841; June 1972.

Proctor, Charles McDavitt. An Experimental Study of the Relationship Between Certain Theoretically Postulated Elements in Classroom Learning and Student Achievement, Grade Distributions, and the Incidence of Certain Classroom Activities. (University of Maryland, 1967.) Dis. Abst. 28A: 4546; May 1968.

Proger, Barton Bernard. The Relationship Between Four Testing Programs and the Resultant Achievement and Test Anxiety Levels of High- and Low-Previous Achievement Sixth-Grade Arithmetic Students. (Lehigh University, 1968.) Dis. Abst. 29A: 3880; May 1969.

Prouse, Howard L. The Construction and Use of a Test for the Measurement of Certain Aspects of Creativity in Seventh-Grade Mathematics. (State University of Iowa, 1964.) Dis. Abst. 26: 394; July 1965.

Pruitt, Ralph Lewis. An Analysis of Types of Exercises in Plane Geometry Texts in the United States from 1878 to 1966. (Ohio State University, 1969.) Dis. Abst. Int. 30A: 1414; Oct. 1969.

Pruzek, Robert Marshall. A Comparison of Two Methods for Studying Test Items. (University of Wisconsin, 1967.) Dis. Abst. 28A: 3035; Feb. 1968.

Puglisi, Donald Francis. The Differential Effects of Supplemental Self-Instruction on Student Achievement in Mathematics. (Lehigh University, 1970.) Dis. Abst. Int. 31A: 5043; Apr. 1971.

Pullman, Howard Wayne. The Relation of the Structure of Language to Mathematical Ability. (Columbia University, 1972.) Dis. Abst. Int. 33A: 2179; Nov. 1972.

Purcell, Joseph E. The Relation of Student Classroom Marks and Regents Examination Marks to Teacher Knowledge of Student Standardized Test Scores. (State University of New York at Albany, 1972.) *Dis. Abst. Int.* 33A: 2722; Dec. 1972.

Purser, Jerry Donaldson. The Relation of Manipulative Activities, Achievement and Retention, in a Seventh-Grade Mathematics Class: An Exploratory Study. (University of Georgia, 1973.) *Dis. Abst. Int.* 34A: 3255-3256; Dec. 1973.

Putbrese, Larry Max. An Investigation Into the Effect of Selected Patterns of Grouping Upon Arithmetic Achievement. (University of South Dakota, 1971.) *Dis. Abst. Int.* 32A: 5113; Mar. 1972.

Putoff, Orval Edward, Jr. An Evaluation of Transfer Following Discovery Oriented Tutoring of Young Children on Classification and Related Tasks. (Claremont Graduate School, 1973.) *Dis. Abst. Int.* 33B: 4494-4495; Mar. 1973.

Pyatte, Jeff Alvin. An Experimental Study of the Effects of Structuring a Unit on Achievement and Transfer for Upper Elementary School Students of High, Middle, and Low Basic Ability. (University of Virginia, 1967.) *Dis. Abst.* 28A: 3516-3517; Mar. 1968.

Pyrczak, Fred, Jr. Objective Evaluation of the Quality of Multiple-Choice Test Items. (University of Pennsylvania, 1972.) *Dis. Abst. Int.* 33A: 3401; Jan. 1973.

Qualls, Lula Jane. Effects of Review and Cueing on Elementary School Teachers' Performance on a Standardized Mathematics Test. (University of Tennessee, 1969.) *Dis. Abst. Int.* 30A: 4693; May 1970.

Quast, William Garfield. Geometry in the High Schools of the United States: An Historical Analysis from 1890 to 1966. (Rutgers, The State University, 1968.) *Dis. Abst.* 28A: 4888; June 1968.

Quick, Alton David. Number and Related Concepts for Arithmetic for the Educable Mentally Retarded. (University of Alabama, 1966.) *Dis. Abst.* 27A: 2953-2954; Mar. 1967.

Raba, Sister Mary Helen. A Study of Interaction of Aptitude and Treatment in Algebra I. (Columbia University, 1973.) *Dis. Abst. Int.* 34A: 71; July 1973.

Raeihle, Sister Mary Jane. The Relation Between Elementary School Teachers' Understanding of Properties of the Real Numbers and Pupil Achievement in Mathematics. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 1987-1988; Nov. 1972.

Rafiq, Razia. A Scientific Evaluation of the Unit "Relations and Functions" in Three Algebra Programmed Textbooks in Terms of Educational Objectives. (Indiana University, 1964.) Dis. Abst. 25: 4581; Feb. 1965.

Rasmussen, Dean Stewart. Urban Junior High School Mathematics Curricula at the Seventh and Eighth Grade Levels. (University of Southern California, 1968.) Dis. Abst. 29A: 1688; Dec. 1968.

Rathmell, Edward Cary. The Effects of Multibase Grouping and Early or Late Introduction of Base Representations on the Mastery Learning of Base and Place Value Numeration in Grade One. (University of Michigan, 1972.) Dis. Abst. Int. 33A: 6071-6072; May 1973.

Ratzlaff, Harold Cornie. The Relative Effectiveness of Advance Organizers in the Acquisition, Retention, and Lateral Transfer of Seventh Grade, Base Five Mathematics. (University of Oregon, 1970.) Dis. Abst. Int. 31A: 5277-5278; Apr. 1971.

Raygor, Betty Ruth Muntz. A Five Year Follow-Up Study Comparing the School Achievement and School Adjustment of Children Retained in Kindergarten and Children Placed in a Transition Class. (University of Minnesota, 1972.) Dis. Abst. Int. 33A: 1526; Oct. 1972.

Reavis, H. Kenton. The Development and Validation of a Mediated Basic Math Facts Teaching Program for Application by Parents. (Utah State University, 1972.) Dis. Abst. Int. 33A: 4986; Mar. 1973.

Rebhun, Albert Mitchell. The Reflective-Impulsive Dimension and Mathematical Performance in the Elementary School. (University of California, Los Angeles, 1973.) Dis. Abst. Int. 34A: 3039-3040; Dec. 1973.

Reed, Mary Katherine Stevens. Vocabulary Load of Certain State-Adopted Mathematics Textbooks, Grades One Through Three. (University of Southern California, 1965.) Dis. Abst. 26: 3706; Jan. 1966.

Reeves, Charles Anderson. The Comparative Effects of Two Methods of Introducing Mathematical Induction and Two Methods of Presenting Succeeding Problems. (Florida State University, 1972.) Dis. Abst. Int. 33A: 2622; Dec. 1972.

Reeves, James William. A Critical Analysis of the Function Concept in Secondary School Mathematics. (University of Florida, 1969.) Dis. Abst. Int. 31A: 1148-1149; Sept. 1970.

Regula, Charles Richard. A Study of the Relative Importance of Selected Pre-Skills and the Effects of Group and Individual Instruction in the Use of the DOT Overlay Technique in Teaching Addition to the Educable Mentally Retarded. (University of Oregon, 1972.) *Dis. Abst. Int.* 33A: 6757; June 1973.

Reichert, Conrad Alfred. The Effects of Learner, Task and Criterion Test Characteristics on Learning in Scrambled Item Sequences. (Cornell University, 1971.) *Dis. Abst. Int.* 32A: 253-254; July 1971.

Reile, Harry Charles. The Status of Modern Mathematics in Nebraska Elementary Schools. (University of Nebraska Teachers College, 1967.) *Dis. Abst.* 28A: 3381; Mar. 1968.

Reisman, Fredricka Kauffman. An Evaluative Study of the Effects of Cognitive Acceleration in Mathematics in the Early School Years. (Syracuse University, 1968.) *Dis. Abst.* 29A: 4197; June 1969.

Reitz, Ronald Tennyson. A Comparison of Methods for Teaching Conservation of Number to Retardates. (Pennsylvania State University, 1970.) *Dis. Abst. Int.* 31A: 2796; Dec. 1970.

Remacle, Leo Felix. A Comparative Study of the Differences in Attitudes, Self-Concept, and Achievement of Children in Graded and Nongraded Elementary Schools. (University of South Dakota, 1970.) *Dis. Abst. Int.* 31A: 5948; May 1971.

Retzer, Kenneth Albert. The Effect of Teaching Certain Concepts of Logic on Verbalization of Discovered Mathematical Generalizations. (University of Illinois, 1967.) *Dis. Abst.* 28A: 1351-1352; Oct. 1967.

Reynolds, Philip Roger. Understanding Conditional Statements at the Tenth Grade Level. (University of Rochester, 1973.) *Dis. Abst. Int.* 34A: 125; July 1973.

Rhodes, Jon Glenn. A Comparative Study of Individually and Group Administered Visual Motor Gestalt Test as Related to Academic Achievement. (University of Houston, 1972.) *Dis. Abst. Int.* 33A: 2792; Dec. 1972.

Rich, Littleton Waldo. The Effects of a Manipulative Instructional Mode in Teaching Mathematics to Selected 7th Grade Inner-City Students. (Temple University, 1972.) *Dis. Abst. Int.* 33B: 330; July 1972.

Richards, Hyrum Edwards. Variations on Piaget's Pre-Number Developmental Tests Used as Learning Experiences. (Utah State University, 1968.) *Dis. Abst.* 29B: 3114; Feb. 1969.

Richards, Kenvyn Barrett. A Comparison of the Effects of Verbal-Manipulative Forms of Programed Instruction in Teaching Measurement Skills to Sixth Grade Pupils. (University of Maryland, 1970.) Dis. Abst. Int. 31A: 5818; May 1971.

Richards, Leo. A Study of the Relationships Between Selected Conceptual Abilities and Mathematics Achievement Among First Grade Children. (University of Southern California, 1972.) Dis. Abst. Int. 33A: 2085; Nov. 1972.

Richer, Howard Marshall. Peer Teaching as a Facilitator of Learning: Using Conservation of Substance as a Measure. (University of California, Los Angeles, 1973.) Dis. Abst. Int. 34A: 641; Aug. 1973.

Richman, Marilyn D. The Effects of Individual and Group Competition on Productivity and Interpersonal Relationships in Elementary School Children. (St. John's University, 1972.) Dis. Abst. Int. 33B: 905; Aug. 1972.

Richter, Robert Henry. A Comparison of Two Methods of Motivation in Teaching Fractions to Fourth and Sixth Grade Pupils. (University of Arizona, 1972.) Dis. Abst. Int. 32A: 5114; Mar. 1972.

Rickard, Esther E. Sidwell. An Inventory of the Number Knowledge of Beginning First Grade School Children, Based on the Performance of Selected Number Tasks. (Indiana University and Indiana State College, 1964.) Dis. Abst. 28A: 406; Aug. 1967.

Riggle, Timothy Andrew. The Vector Space as a Unifying Concept in School Mathematics. (Ohio State University, 1968.) Dis. Abst. 29B: 1764-1765; Nov. 1968.

Riggs, Corinne Whitlow. The Construction and Evaluation of a Programmed Text on the Interpretation of Graphs for Grade Five. (University of California, Los Angeles, 1966.) Dis. Abst. 27A: 2748; Mar. 1967.

Riggs, Richard Forrest. The Mean Value Theorem as a Topic for Calculus in the Ninth Grade. (Rutgers, The State University, 1968.) Dis. Abst. 29A: 2044; Jan. 1969.

Riley, James Edward. A Comparison of the Abilities of Late Elementary School Children to Learn Tasks on the Operations of Signed Numbers. (Michigan State University, 1970.) Dis. Abst. Int. 31A: 5878; May 1971.

Riley, Sister Mary Felicitas. An Analysis of Timed and Untimed Test Scores of Subjects from Two Different Arithmetic Curricula. (Fordham University, 1963.) Dis. Abst. 25: 2354-2355; Oct. 1964.

Rising, Gerald Richard. The Student Mathematics Journal Project: A Comparative Study of Intrinsic Interest in Mathematics of Selected High School Students. (New York University, 1965.) Dis. Abst. 27A: 999-1000; Oct. 1966.

Ritter, Myron Wayne. A Comparison of the Traditional Approach and of Independent Study by Video-Tape Dial Access in Trigonometry Classes. (Pennsylvania State University, 1970.) Dis. Abst. Int. 32A: 254; July 1971.

Rivera, Carmen Elena. Academic Achievement, Bicultural Attitudes and Self-Concepts of Pupils in Bilingual and Non-Bilingual Programs. (Fordham University, 1973.) Dis. Abst. Int. 34A: 2238-2239; Nov. 1973.

Rivera, Hugo H. Ascertaining Language and Computational Curriculum Needs for Economically Disadvantaged Mexican-American Elementary Students. (Arizona State University, 1971.) Dis. Abst. Int. 32A: 2516; Nov. 1971.

Roach, Sister Mary Luke. A Study of the Efficiency of Certain Variables in Predicting Success in High School. (Fordham University, 1966.) Dis. Abst. 27A: 2075; Jan. 1967.

Robbins, Janet Gehring. Mathematics Achievement and Attitude Toward Mathematics as a Function of Verbal Positive Reinforcement and Verbal Plus Physical Positive Reinforcement. (University of Mississippi, 1972.) Dis. Abst. Int. 33A: 3404; Jan. 1973.

Robe, Harry Robert. Effects of the Presence of an Observer Upon Problem-Solving Behavior for Boys Who Vary in Test Anxiety. (Indiana University, 1966.) Dis. Abst. 27A: 3322; Apr. 1967.

Roberge, James Joseph. An Investigation of Children's Abilities to Reason with Principles of Class Reasoning and Their Isomorphs in Conditional Reasoning. (University of Connecticut, 1969.) Dis. Abst. Int. 30A: 592-593; Aug. 1969.

Roberts, Gerhard Herman. A Critical Evaluation of the Presentation of First Year Algebra in Two Contemporary Courses Based on Selected Criteria from the Theory of Learning. (Columbia University, 1966.) Dis. Abst. 27A: 611; Sept. 1966.

Roberts, William Joseph. Measuring Aspects of Quantitative Judgment of Upper Elementary and Junior High School Students. (University of Massachusetts, 1970.) Dis. Abst. Int. 31B: 4860-4861; Feb. 1971.

Robertshaw, Carroll Stuart. An Investigation of Attention to Task Behavior, Arithmetic Performance and Behavior Problems in First Grade Children. (University of Kansas, 1971.) Dis. Abst. Int. 32A: 5642; Apr. 1972.

Robertson, Howard Charles. The Effects of the Discovery and Expository Approach of Presenting and Teaching Selected Mathematical Principles and Relationships to Fourth Grade Pupils. (University of Pittsburgh, 1970.) Dis. Abst. Int. 31A: 5278-5279; Apr. 1971.

Robinson, Frank Edward. An Analysis of the Effects of Tape-Recorded Instruction on Arithmetic Performance of Seventh Grade Pupils with Varying Abilities. (North Texas State University, 1968.) Dis. Abst. 29A: 3782; May 1969.

Robinson, G. Edith. An Investigation of Junior High School Students' Spontaneous Use of Proof to Justify Mathematical Generalizations. (University of Wisconsin, 1964.) Dis. Abst. 25: 2300; Oct. 1964.

Robinson, Inez Cooper. The Acquisition of Quantitative Concepts in Children. (University of Southern California, 1967.) Dis. Abst. 28A: 3038; Feb. 1968.

Robinson, Lucile Thurston. An Exploratory Study of the Utilization of Spatial Concepts by Children. (Claremont Graduate School and University Center, 1970.) Dis. Abst. Int. 31A: 1631; Oct. 1970.

Robinson, Mary L. An Investigation of Problem Solving Behavior and Cognitive and Affective Characteristics of Good and Poor Problem Solvers in Sixth Grade Mathematics. (State University of New York at Buffalo, 1973.) Dis. Abst. Int. 33A: 5620; Apr. 1973.

Robinson, Violet Helen Ban. An Investigation of the Performance of Kindergarten Children on Quantitative Class Inclusion Tasks. (Stanford University, 1970.) Dis. Abst. Int. 31A: 1631-1632; Oct. 1970.

Robson, Allen Maynard. A Comparative Study of the Teaching of First Year Algebra. (Oklahoma State University, 1965.) Dis. Abst. 27A: 85; July 1966.

Rohr, Judith Ann Green. The Relationship of the Ability to Conserve on Piagetian Tasks to Achievement in Mathematics. (University of Tennessee, 1973.) Dis. Abst. Int. 34A: 2398; Nov. 1973.

Roll, Samuel. Two Issues in Conservation of Number: Training and Stimulus Characteristics. (Pennsylvania State University, 1968.) Dis. Abst. 29B: 3947-3948; Apr. 1969.

Rollins, James Hendrix. A Comparison of Three Stratagems for Teaching Mathematical Concepts and Generalizations by Guided Discovery. (University of Illinois, 1966.) Dis. Abst. 27A: 711-712; Sept. 1966.

Romberg, Thomas Albert. Derivation of Subtests Measuring Distinct Mental Processes Within the NLSMA Algebra Achievement Test. (Stanford University, 1968.) Dis. Abst. 29A: 419; Aug. 1968.

Ronan, Franklin Delano. Study of the Effectiveness of a Computer When Used as a Teaching and Learning Tool in High School Mathematics. (University of Michigan, 1971.) Dis. Abst. Int. 32A: 1264-1265; Sept. 1971.

Ronshausen, Nina Lorraine. A Comparison of the Effects on Achievement and Attitude of Two Methods of Tutoring First-Grade Mathematics in the Inner-City: Programed vs. Directed. (Indiana University, 1971.) Dis. Abst. Int. 32A: 4494; Feb. 1972.

Root, Paul Ray. Speed Reading: Its Relation to High School Achievement in English, History, Mathematics, and Science in Hot Springs, Arkansas. (University of Arkansas, 1964.) Dis. Abst. 25: 1791-1792; Sept. 1964.

Ropes, George Hardcastle. The Effects of a Mathematics Laboratory on Elementary School Students. (Columbia University, 1972.) Dis. Abst. Int. 33A: 4250; Feb. 1973.

Rose, Susan Ann. A Study of Children's Understanding of Cardinal Number. (New York University, 1969.) Dis. Abst. Int. 32B: 2383-2384; Oct. 1971.

Rosenbaum, Sema Joy Marks. A Course in Computer Simulation for High School Students. (Harvard University, 1970.) Dis. Abst. Int. 31A: 5676; May 1971.

Roughead, William George, Jr. A Clarification of Part of the Discovery Versus Exposition Discussion in Mathematics. (Florida State University, 1966.) Dis. Abst. 27A: 2452-2453; Feb. 1967.

Rouse, William Morrison, Jr. A Study of the Correlation Between the Academic Preparation of Teachers of Mathematics and the Mathematics Achievement of Their Students in Kindergarten Through Grade Eight. (Michigan State University, 1967.) Dis. Abst. 28A: 4031; Apr. 1968.

Rousseau, Leon Antonio. The Relationship Between Selected Mathematical Concepts and Retention and Transfer Skills with Respect to Long Division Algorithms. (Washington State University, 1972.) Dis. Abst. Int. 32A: 6750; June 1972.

Rowland, Jane Mayers. Relations Between Children's Developmental Level in Performing Piagetian Angle Tasks and Achievement in Learning Angle Measure, in Upper Elementary Grades. (University of Houston, 1972.) Dis. Abst. Int. 34A: 125; July 1973.

Roy, Gregory Raymond. The Effect of the Study of Mathematical Logic on Student Performance in Proving Theorems by Mathematical Induction. (State University of New York at Buffalo, 1970.) Dis. Abst. Int. 1A: 4045; Feb. 1971.

Ruby, Larry Lee. Multivariate Analysis of Achievement and Adjustment Data of Mobile Elementary School Children. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 34A: 624; Aug. 1973.

Rudolph, Eleanore L. A Survey of Data Processing and Computer Use in Instruction in Illinois Secondary Schools. (Northern Illinois University, 1972.) Dis. Abst. Int. 33A: 505-506; Aug. 1972.

Rudolph, William Brown. Estimates of the Relative Sequential Constraint for Selected Passages from Mathematics Books and the Relationship of These Measures to Reading Comprehension. (Purdue University, 1969.) Dis. Abst. Int. 30A: 4880; May 1970.

Rust, Richard George. The Effects of Studying Certain Mathematics Courses on Mathematical Competency in Selected Michigan High Schools. (University of Michigan, 1964.) Dis. Abst. 25: 7030-7031; June 1965.

Rutherford, John Alby. The Effect of Student Teaching Upon Pupil Achievement in Selected Fourth Grade Classrooms. (University of Virginia, 1967.) Dis. Abst. 28A: 2919; Feb. 1968.

Rutherford, William Lewis. The Effects of a Perceptual-Motor Training Program on the Performance of Kindergarten Pupils on Metropolitan Reaniness Tests. (North Texas State University, 1964.) Dis. Abst. 25: 4583-4584; Feb. 1965.

Salzberg, Charles L. The Effect of a Free Time Contingency on the Rate of Math Progress in an Elementary "Free" School. (University of Kansas, 1972.) Dis. Abst. Int. 33B: 5550; May 1973.

Sams, Orval J., Jr. The Ability to Conserve Volume of a Solid Among Selected Indian and Caucasian Pupils. (University of Arizona, 1969.) Dis. Abst. Int. 30A: 1344; Oct. 1969.

Samuels, Joseph Maurice. A Comparison of Projects Representative of Compensatory; Busing; and Non-Compensatory Programs for Inner-City Students. (University of Connecticut, 1971.) Dis. Abst. Int. 32A: 6725; June 1972.

Ryoti, Don Elno. Student Responses to Equivalent Inference Schemes in Class and Conditional Logic. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 34A: 624; Aug. 1973.

Sabers, Darrell Lee. A Study of the Predictive Validity of the Iowa Algebra Aptitude Test for Prognosis in Ninth Grade Modern Mathematics and Traditional Algebra. (University of Iowa, 1967.) Dis. Abst. 28A: 2919-2920; Feb. 1968.

Safransky, Robert James. A Comparison of the Retention Rate, the Scholastic Achievement and Self Concepts of Pupils in a Comprehensive Junior High School and Pupils in Control Junior High Schools. (Florida State University, 1972.) Dis. Abst. Int. 33A: 5481-5482; Apr. 1973.

Salisbury, Robert Gardner. A Study of Programmed Instruction in Selected Secondary Schools of Ohio. (Western Reserve University, 1965.) Dis. Abst. 27A: 712; Sept 1966.

Sandefur, Earl Wilton. Experimental Study of Two Methods of Drill for Mastering Addition and Subtraction Facts. (Duke University, 1965.) Dis. Abst. 26: 4401; Feb. 1966.

Sanders, Frank Jarman. A Study of the Impact of the Chattanooga Public Schools' Head Start Follow-Through Program 1967-1970. (University of Tennessee, 1970.) Dis. Abst. Int. 32A: 142-143; July 1971.

Sanders, Stanley Gordon. Differences in Mental and Educational Development from Grades Six Through Nine and Implications for Junior High School Organization. (University of Iowa, 1966.) Dis. Abst. 27A: 1234; Nov. 1966.

Sanders, Violet Alexandra. Arithmetic Problem Solving Strategies of Fourth Grade Children. (Wayne State University, 1972.) Dis. Abst. Int. 33A: 5983-5984; May 1973.

Sanders, Walter John. Teaching Statistical Decision Making to Junior High School Students. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 4333-4334; Feb. 1972.

Santos, Felix P. A Test of Understandings of Selected Properties of a Number System in Iloco for Grades 4, 5, and 6. (Indiana University, 1968.) Dis. Abst. 29A: 3506; Apr. 1969.

Saperstein, Paul. An Investigation of Pupil Mobility and Pupil Achievement in Reading and Mathematics in a Public Elementary School. (New York University, 1971.) Dis. Abst. Int. 32A: 5514-5515; Apr. 1972.

Savells, Jerald Owens. A Sociological Analysis of the Relationship Between the Home Environment and Achievement in Mathematics Among a Select Sample of Culturally Disadvantaged Students. (Louisiana State University and Agricultural and Mechanical College, 1971.) *Dis. Abst. Int.* 32A: 1098; Aug. 1971.

Sawada, Daiyo. Toward a Theory of Sequencing: Study 3-1: Curriculum Hierarchies and the Structure of Intelligence: A Strategy of Organizing Instructional Objectives Into Mathematical Systems Employing Basic Piagetian Constructs. (Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 6221-6222; May 1972.

Scanlon, Robert G. Factors Associated with a Program for Encouraging Self-Initiated Activities by Fifth and Sixth Grade Students in a Selected Elementary School Emphasizing Individualized Instruction. (University of Pittsburgh, 1966.) *Dis. Abst.* 27A: 3376; Apr. 1967.

Schacht, Elmer James. A Study of the Mathematical Errors of Low Achievers in Elementary School Mathematics. (Wayne State University, 1966.) *Dis. Abst.* 28A: 920-921; Sept. 1967.

Schaefer, William Albert. The Relationship of Teaching Methods to Self-Esteem and Achievement in Mathematics Among Seventh and Eighth Grade Students. (Northern Illinois University, 1972.) *Dis. Abst. Int.* 33A: 624; Aug. 1972.

Schafer, Larry Eugene. Inducing Stage III Seriation Capabilities in Kindergarten Children Through Cue Fading and Reinforcement. (Michigan State University, 1972.) *Dis. Abst. Int.* 33A: 624-625; Aug. 1972.

Schall, William Edward. A Comparison of Mental Arithmetic Modes of Presentation in Elementary School Mathematics. (Pennsylvania State University, 1969.) *Dis. Abst. Int.* 31A: 684; Aug. 1970.

Schell, Leo Mac. Two Aspects of Introductory Multiplication: The Array and the Distributive Property. (State University of Iowa, 1964.) *Dis. Abst.* 25: 1561-1562; Mar. 1965.

Schenck, Betsy Roberts. Teaching Correlates of Number Conservation to Very Young Children. (University of North Carolina at Greensboro, 1973.) *Dis. Abst. Int.* 33B: 4550-4551; Mar. 1973.

Schilling, Frank Charles. A Description of the Development and Implementation of a Curriculum-Materials Package for Teaching Mathematics to Low Achievers. (University of Pittsburgh, 1969.) *Dis. Abst. Int.* 30A: 1925-1926; Nov. 1969.

Schimmel, Solomon. Conditional Discrimination, Number Conception and Response Inhibition in Two and Three Year Old Children. (Wayne State University, 1971.) Dis. Abst. Int. 32B: 6696-6697; May 1972.

Schippert, Frederick Arthur. A Comparative Study of Two Methods of Arithmetic Instruction in an Inner-City Junior High School. (Wayne State University, 1964.) Dis. Abst. 25: 5162-5163; Mar. 1965.

Schlinsog, George William. The Effects of Supplementing Sixth Grade Arithmetic Instruction with a Study of Other Number Bases. (University of Oregon, 1965.) Dis. Abst. 26: 5307; Mar. 1966.

Schloff, Charles E. An Exploratory Study of Teachers' Application of Inductive Approaches in Developing an Awareness of Geometry with Fifth and Sixth Grade Children. (Wayne State University, 1972.) Dis. Abst. Int. 33A: 6076-6077; May 1973.

Schmatz, Robert Raymond. A Comparison of Achievement and Attitudes of Sixth-Grade Students in Regular and Combination Grades. (Michigan State University, 1965.) Dis. Abst. 26: 910; Aug. 1965.

Schmelter, Raymond Charles. A Study of Attitude Change of Elementary Teachers in an In-Service Mathematics Education Program. (University of Wisconsin, 1969.) Dis. Abst. Int. 31A: 667-668; Aug. 1970.

Schmidt, Mary Merle. Effects of Teaching the Commutative Laws, Associative Laws, and the Distributive Law of Arithmetic on Fundamental Skills of Fourth Grade Pupils. (University of Mississippi, 1965.) Dis. Abst. 26: 4510-4511; Feb. 1966.

Schneider, Arthur J. An Investigation of the Relationships Between Self Concept of Ability, Achievement, and Level of Occupational Aspiration Among Ninth Grade Boys. (University of Rochester, 1969.) Dis. Abst. Int. 30A: 3285-3286; Feb. 1970.

Schnur, James Oliver. A Study of Programed Instruction and Teacher-Taught Modes and Initial Long Division Achievement of Children Classified According to Their Conceptual Tempos. (State University of New York at Buffalo, 1970.) Dis. Abst. Int. 31A: 1696; Oct. 1970.

Schrader, Barbara H. Function and Group as Unifying Themes in Secondary School Algebra. (State University of New York at Albany, 1972.) Dis. Abst. Int. 34A: 1067-1068; Sept. 1973.

Schrag, Judith Ann Woelk. Effects of Three Educational Placements for Children with Learning Disabilities in a Rural Area. (University of Idaho, 1972.) *Dis. Abst. Int.* 33A: 2203; Nov. 1972.

Schrankler, William Jean. A Study of the Effectiveness of Four Methods for Teaching Multiplication of Whole Numbers in Grade Four. (University of Minnesota, 1966.) *Dis. Abst.* 27A: 4055; June 1967.

Schwager, Melvin Sol. The Experimental Acquisition of the Concept of Conservation of Number in Young Children. (University of Illinois, 1969.) *Dis. Abst. Int.* 31A: 648; Aug. 1970.

Schwartz, Frederick J. The Impact on Learning of COLAMDA Project Materials on Low Achievers in Mathematics. (University of Denver, 1971.) *Dis. Abst. Int.* 32A: 3576; Jan. 1972.

Scott, Allen Wayne. An Evaluation of Prescriptive Teaching of Seventh-Grade Arithmetic. (North Texas State University, 1969.) *Dis. Abst. Int.* 30A: 4696; May 1970.

Scott, Dorothy Marie. A Modern Mathematics Test to Evaluate Pre-Set Goals in a City School. (St. Louis University, 1970.) *Dis. Abst. Int.* 31A: 3791; Feb. 1971.

Scott, Joseph Augustine. The Effects on Short- and Long-Term Retention and on Transfer of Two Methods of Presenting Selected Geometry Concepts. (University of Wisconsin, 1970.) *Dis. Abst. Int.* 31A: 6413; June 1971.

Scott, Roger Owen. Mathetic and Progressive Chain Strategies for Instructional Sequencing. (University of Michigan, 1968.) *Dis. Abst. Int.* 30A: 593; Aug. 1969.

Scrivens, Robert William. A Comparative Study of Different Approaches to Teaching the Hindu-Arabic System to Third-Graders. (University of Michigan, 1968.) *Dis. Abst.* 29A: 839-840; Sept. 1968.

Searle, Robert Eli. Mathematical Abilities Possessed by Kindergarten Children from Disadvantaged Communities. (University of California, 1968.) *Dis. Abst.* 29A: 1735-1736; Dec. 1968.

Sederberg, Charles Herbert. A Comparison of Mathematics Teaching Methods for Average and Below-Average Ninth Grade Pupils. (University of Minnesota, 1964.) *Dis. Abst.* 25: 2384-2385; Oct. 1964.

Seegmiller, Conni Ratnoff. Conservation of Quantity: A Cross-Cultural Investigation Into the Development of the Concept of Conservation of Quantity in Mexican and American Children Between Four and Nine Years of Age. (New York University, 1971.) *Dis. Abst. Int.* 32B: 4262-4263; Jan. 1972.

Sekyra, Francis, III. The Effects of Taped Instruction on Problem-Solving Skills of Seventh Grade Children. (University of Alabama, 1968.) *Dis. Abst.* 29A: 3473-3474; Apr. 1969.

Sension, Donald Bruce. A Comparison of Two Conceptual Frameworks for Teaching the Basic Concepts of Rational Numbers. (University of Minnesota, 1971.) *Dis. Abst. Int.* 32A: 2408; Nov. 1971.

Shantz, Carolyn Uhlinger. A Developmental Study of Piaget's Theory of Logical Multiplication. (Purdue University, 1966.) *Dis. Abst.* 27B: 603; Aug. 1966.

Sharlow, John Francis. Retroactive and Proactive Effects of Learning Certain Aspects of Symbolic Logic on Ninth and Tenth Grade Students' Understanding of Mathematical Topics. (State University of New York at Albany, 1971.) *Dis. Abst. Int.* 32A: 1841; Oct. 1971.

Sharp, Richard Malcolm. An Experimental Study of Two Approaches to Teaching Informal Geometry in Grades Three and Four. (Boston University School of Education, 1967.) *Dis. Abst. Int.* 30A: 74-75; July 1969.

Sharpe, Jack E. The Application of Contingency Management to a Remedial School Population. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 1555; Oct. 1972.

Shaw, Carl Neil. Effects of Three Instructional Strategies on Achievement in a Remedial Arithmetic Program. (Florida State University, 1968.) *Dis. Abst.* 29A: 1479-1480; Nov. 1968.

Shea, Robert Albert. A Study of the Effects of Contingencies of Reinforcement on Academic Behavior of Elementary School Children in a Regular Classroom. (Washington State University, 1973.) *Dis. Abst. Int.* 34B: 2953; Dec. 1973.

Shepler, Jack Lee. A Study of Parts of the Development of a Unit in Probability and Statistics for the Elementary School. (University of Wisconsin, 1969.) *Dis. Abst. Int.* 31A: 1151-1152; Sept. 1970.

Sheppard, Allan Noel. Changing Learner Conceptual Behavior Through the Selective Use of Positive and Negative Examples. (Indiana University, 1971.) Dis. Abst. Int. 32A: 4496; Feb. 1972.

Sherer, Margaret Turner. An Investigation of Remedial Procedures in Teaching Elementary School Mathematics to Low Achievers. (University of Tennessee, 1967.) Dis. Abst. 28A: 4031-4032; Apr. 1968.

Sherman, Deaconess Ann. The Relationship of Teacher Behavior and Child Behavior of Four and Five Year Old Black Disadvantaged Children During Distar and During Non-Distar Sessions. (University of Virginia, 1971.) Dis. Abst. Int. 32A: 4455-4456; Feb. 1972.

Sherman, Helene Zeeman. Common Elements of New Mathematics Programs for the Elementary School: Origin and Development. (Columbia University, 1969.) Dis. Abst. Int. 31A: 84; July 1970.

Sherrill, James Malcolm. The Effects of Differing Presentations of Mathematical Word Problems Upon the Achievement of Tenth Grade Students. (University of Texas at Austin, 1970.) Dis. Abst. Int. 31A: 3427; Jan. 1971.

Sherzer, Laurence. Effects of Different Methods of Integer Addition Instruction on Elementary School Students of Different Grade and Aptitude Levels. (University of Miami, 1973.) Dis. Abst. Int. 34A: 2465; Nov. 1973.

Shilgalis, Thomas Walter. Transformations in High School Geometry: A Critical Analysis. (University of Illinois at Urbana-Champaign, 1971.) Dis. Abst. Int. 32A: 5478-5479; Apr. 1972.

Shoecraft, Paul Joseph. The Effects of Provisions for Imagery Through Materials and Drawings on Translating Algebra Word Problems, Grades Seven and Nine. (University of Michigan, 1971.) Dis. Abst. Int. 32A: 3874-3875; Jan. 1972.

Shull, Evan Dwain. A Comparison of Methods Used to Group High School Freshmen in Mathematics. (Colorado State College, 1966.) Dis. Abst. 27A: 2293; Feb. 1967.

Shulte, Albert Philip. The Effects of a Unit in Probability and Statistics on Students and Teachers of Ninth-Grade General Mathematics. (University of Michigan, 1967.) Dis. Abst. 28A: 4962; June 1968.

Shumaker, James E. A Comparison of Study Habits, Study Attitudes, and Academic Achievement in Mathematics in Junior High School of Students Taught by Individually Prescribed Instruction and Students Taught by Traditional Methods of Instruction in Elementary School. (University of Pittsburgh, 1972.) Dis. Abst. Int. 33A: 6657; June 1973.

Shumway, Richard James. The Role of Counterexamples in the Development of Mathematical Concepts of Eighth Grade Mathematics Students. (University of Minnesota, 1969.) Dis. Abst. Int. 30A: 3368-3369; Feb. 1970.

Sibilia, Sister Anita Marie. An Axiomatic Analysis of the Fundamental Concepts of the Arithmetic of Natural and Rational Numbers as Presented in Textbooks from the Colonial Period to the Present Day. (Pennsylvania State University, 1967.) Dis. Abst. 28B: 2535; Dec. 1967.

Silverblank, Francine. Sense of Responsibility, Level of Anxiety, and Sociability in Suburban Male High School Seniors Who Are Talented in Mathematics and Those Talented in English. (New York University, 1970.) Dis. Abst. Int. 31A: 6414; June 1971.

Silbaugh, Charlotte Vance. A Study of the Effectiveness of a Multiple-Activities Laboratory in the Teaching of Seventh Grade Mathematics to Inner-City Students. (George Washington University, 1972.) Dis. Abst. Int. 33A: 205; July 1972.

Simmons, Mary Patricia. The Effects of Verbal Language Deficit Associated with Profound Prelingual Hearing Impairment on Children's Representation of Space. (University of California, Los Angeles, 1971.) Dis. Abst. Int. 32A: 6254; May 1972.

Simmons, Sadie Vee. A Study of Two Methods of Teaching Mathematics in Grades Five, Six, and Seven. (University of Georgia, 1965.) Dis. Abst. 26: 6566-6567; May 1966.

Simpson, Robert Edward. The Effects of Cognitive Styles and Chronological Age in Achieving Conservation Concepts of Substance, Weight, and Volume. (University of Alabama, 1970.) Dis. Abst. Int. 31A: 3353; Jan. 1971.

Singh, Jane Marie. An Investigation of the Effect of Individualized Enrichment Homework Upon the Academic Achievement of Children in the Fourth, Fifth, and Sixth Grades. (Arizona State University, 1969.) Dis. Abst. Int. 30A: 3203-3204; Feb. 1970.

Singletary, Richard Edward. A Study Designed to Assess the Relationship of Instruction to the Performance of Eighth Grade Students on Euclidean Sectioning Tasks Involving Certain Selected Solids. (University of Washington, 1972.) *Dis. Abst. Int.* 33A: 2089-2090; Nov. 1972.

Singleton, David George. The Impact of an In-Service Training Program in Modern Mathematics on Teachers' Knowledge of Modern Math Concepts, Teachers' Attitude Toward Mathematics, and Pupils' Performance on Standardized Achievement Tests. (Duke University, 1971.) *Dis. Abst. Int.* 32A: 5661; Apr. 1972.

Sinks, Thomas Alonzo. How Individualized Instruction in Junior High School Science, Mathematics, Language Arts, and Social Studies Affects Student Achievement. (University of Illinois, 1968.) *Dis. Abst. Int.* 30A: 224-225; July 1969.

Sipser, Kenneth. Determinants in the High School Mathematics Program: A Comparison of the Relative Effectiveness of Two Methods of Teaching Certain Topics to Students of Tenth Year Mathematics. (New York University, 1965.) *Dis. Abst.* 27B: 551; Aug. 1966.

Siu, Ping Kee. Relationships Between Motivational Patterns and Academic Achievement in Chinese and Puerto Rican Second- and Third-Grade Students. (Fordham University, 1972.) *Dis. Abst. Int.* 33A: 3407; Jan. 1973.

Skvarcius, Romualdas. Mathematics Performance as a Function of the Discrepancy in Perception of Roles in a Mathematics Classroom. (George Peabody College for Teachers, 1971.) *Dis. Abst. Int.* 32A: 3802; Jan. 1972.

Skypek, Dora Helen. The Relationship of Socio-Economic Status to the Development of Conservation of Number. (University of Wisconsin, 1966.) *Dis. Abst.* 28A: 1012-1013; Sept. 1967.

Sloan, Jack L. A Multivariate Study of Individual Differences Among Teachers and Pupils for a Specific Instructional Unit. (State University of New York at Albany, 1970.) *Dis. Abst. Int.* 31A: 2748; Dec. 1970.

Smart, Margaret Ellis. The Responses of Mexican-American Socio-Economic Groups to Selected Intellectual Tasks. (University of Arizona, 1969.) *Dis. Abst.* 30A: 1927; Nov. 1969.

Smith, Calvin Matthew, Jr. An Exploratory Study of the Effects of Compensatory Education on the Reading and Mathematics Achievement of Intermediate Grade Pupils. (Ohio State University, 1971.) *Dis. Abst. Int.* 32A: 2509-2510; Nov. 1971.

Smith, Charles Leonard. Absolute Value and Inequalities: Applications in Secondary School Mathematics. (Columbia University, 1964.) *Dis. Abst.* 26: 396-397; July 1965.

Smith, Charles Winston, Jr. A Study of Constant Errors in Subtraction and in the Application of Selected Principles of the Decimal Numeration System Made by Third and Fourth Grade Students. (Wayne State University, 1968.) *Dis. Abst. Int.* 30A: 1084; Sept. 1969.

Smith, Dan Faye. A Study of the Relationship of Teacher Sex to Fifth Grade Boys' Sex Role Preference, General Self Concept, and Scholastic Achievement in Science and Mathematics. (University of Miami, 1970.) *Dis. Abst. Int.* 31A: 4563; Mar. 1971.

Smith, George Wilson. The Development of an Instrument to Record the Interaction Between Teacher and Pupil in the Classroom and the Correlation of Certain Factors with Achievement. (University of Maryland, 1971.) *Dis. Abst. Int.* 32A: 1991-1992; Oct. 1971.

Smith, Howard Kenneth. The Effects of Instruction in Set Theory Upon the Logical Reasoning of Seventh-Grade Students and Subsequent Effects Upon Their Learning to Solve Percentage Problems. (Arizona State University, 1968.) *Dis. Abst.* 28A: 4963; June 1968.

Smith, Ian David. The Effects of Computer-Assisted Instruction on Student Self-Concept, Locus of Control, and Level of Aspiration. (Stanford University, 1971.) *Dis. Abst. Int.* 32A: 4432; Feb. 1972.

Smith, Lawrence Anderson. The Effect of Supplementing a Traditional Sixth Grade Arithmetic Program with Mathematical Understandings Presented Through a Non-Computational Testing Technique. (University of Pittsburgh, 1964.) *Dis. Abst.* 26: 802; Aug. 1965.

Smith, Lee A. A Comparison of the Contents of State Adopted Arithmetic Textbooks with Contents of the Arithmetic Sections of Selected Standardized Achievement Batteries. (University of Oklahoma, 1965.) *Dis. Abst.* 26: 3785; Jan. 1966.

Smith, Malcolm Augustus. Development and Preliminary Evaluation of a Unit on Probability and Statistics at the Junior High School Level. (University of Georgia, 1966.) *Dis. Abst.* 27A: 1723; Dec. 1966.

Smith, Robert Francis. A Diagnostic Study of Pupil Performance on a Test of Skills Relevant to the Mastery of Place-Value Tasks. (Fordham University, 1972.) Dis. Abst. Int. 33A: 87-88; July 1972.

Smith, Seaton Elliott, Jr. Transfer Effect on Fourth Grade Pupils' Understanding of a Decimal System as a Result of Studying Non-Decimal Systems Using Programed Instruction. (Ohio University, 1968.) Dis. Abst. 29A: 422; Aug. 1968.

Smith, Wallace Robert. The Achievement of Eighth-Grade Students in Arithmetic with Respect to Selected Patterns of Teacher Preparation. (University of Oklahoma, 1964.) Dis. Abst. 25: 3947; Jan. 1965.

Smith, William Donald. An Investigation of the Ability of Students in the Secondary School Mathematics Curriculum Improvement Study (SSMCIS) to Generalize Their Knowledge of Function Concepts to Other Stimulus Settings. (University of Maryland, 1972.) Dis. Abst. Int. 33A: 6078-6079; May 1973.

Snipes, Walter Thomas. An Analysis of the Relationships of Mobility to Pupil Achievement in Reading, Arithmetic, and Language in Selected Georgia Elementary Schools. (University of Georgia, 1964.) Dis. Abst. 25: 2819-2820; Nov. 1964.

Snyder, Henry Duane, Jr. A Comparative Study of Two Self-Selection--Pacing Approaches to Individualizing Instruction in Junior High School Mathematics. (University of Michigan, 1966.) Dis. Abst. 28A: 159-160; July 1967.

Soeteber, Warren Harvey. Major-Minor Teaching Assignments and Related Pupil Achievement. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4205; Apr. 1970.

Solheim, Jerome Harold. The Effect of the Study of Transformations of the Plane on the Attitudes of Secondary School Geometry Students. (Indiana University, 1971.) Dis. Abst. Int. 32A: 3165; Dec. 1971.

Sollee, Natalie Dosick. Verbal Competence and the Acquisition of Conservation. (Boston University Graduate School, 1969.) Dis. Abst. Int. 30B: 2409-2410; Nov. 1969.

Sooy, John Milton. An Analysis of the Relationship Between the Recommendations of the College Entrance Examination Board and the Algebra Topics Taught in the New Jersey Secondary Schools and Appearing in Their Textbooks. (Temple University, 1969.) Dis. Abst. Int. 31A: 1152; Sept. 1970.

Soriyan, Moses Adedoyin. Measurement of the Goodness-of-Fit of Rasch's Probabilistic Model of Item Analysis to Objective Achievement Tests of the West African School Certificate Examination. (University of Pittsburgh, 1971.) *Dis. Abst. Int.* 32A: 4433; Feb. 1972.

Sowder, Larry Kenneth. Discovery Learning: A Status Study, Grades 4-7, and an Examination of the Influence of Verbalizing Mode on Retention. (University of Wisconsin, 1969.) *Dis. Abst. Int.* 31A: 86-87; July 1970.

Spencer, James Edward. Intertask Interference in Primary Arithmetic. (University of California, Berkeley, 1967.) *Dis. Abst.* 28A: 2570-2571; Jan. 1968.

Spencer, Rosemary Yarr. Application of a Learning Hierarchy to Sequence an Instructional Program and Comparison of This Program with Reverse and Random Sequences. (Florida State University, 1971.) *Dis. Abst. Int.* 32A: 6299-6300; May 1972.

Spickerman, William R. A Study of the Relationships Between Attitudes Toward Mathematics and Some Selected Pupil Characteristics in a Kentucky High School. (University of Kentucky, 1965.) *Dis. Abst. Int.* 30A: 2733; Jan. 1970.

Spikell, Mark A. A Development of Analytic Methods and Techniques for Sketching the Graphs of Factorable Polynomial and Rational Functions Without the Use of Calculus. (Boston University School of Education, 1972.) *Dis. Abst. Int.* 33A: 2698; Dec. 1972.

Spilman, Helen W. The Use of a Single Item-Sample to Estimate Group Achievement. (City University of New York, 1973.) *Dis. Abst. Int.* 34A: 177-178; July 1973.

Spitler, Gail Jean. An Investigation of Various Cognitive Styles and the Implications for Mathematics Education. (Wayne State University, 1970.) *Dis. Abst. Int.* 32A: 105; July 1971.

Stacy, Bobby Fant. A Comparison of Academic Achievement and Mental Maturity Test Scores of Negro High School Seniors in Predominantly White Schools with Academic Achievement and Mental Maturity Test Scores of Negro Seniors in Predominantly Negro Schools. (Mississippi State University, 1971.) *Dis. Abst. Int.* 32A: 1815; Oct. 1971.

Stahl, Dona Kofod. Relationships Between Piaget-Based Criterion Tasks and First Grade Arithmetic Achievement. (University of Rochester, 1973.) *Dis. Abst. Int.* 34A: 2181; Nov. 1973.

Stainback, William Clarence. Effects of Pupil-To-Pupil Tutoring on Arithmetic Achievement and Personal and Social Adjustment. (University of Virginia, 1971.) *Dis. Abst. Int.* 32A: 4456; Feb. 1972.

Stam, Priscilla Joanne. The Effect of Sociometric Grouping on Task Performance in the Elementary Classroom. (Stanford University, 1973.) *Dis. Abst. Int.* 34A: 3244; Dec. 1973.

Stanford, Thomas Enos. Effects of and Teacher Evaluation of Supplementary Activities on Seventh Grade Boys' and Girls' Achievement in and Preference for Mathematics. (University of Mississippi, 1970.) *Dis. Abst. Int.* 31A: 2798-2799; Dec. 1970.

Starkey, Kathryn Towns. The Effect of Teacher Comments on Attitude Toward and Achievement in Secondary Mathematics Classes: An Experimental Study. (Pennsylvania State University, 1970.) *Dis. Abst. Int.* 32A: 259-260; July 1971.

St. Clair, Irene Zercher. A Study of the Development of the Concept of Symmetry by Elementary School Children. (University of Texas, Austin, 1968.) *Dis. Abst.* 29A: 1829; Dec. 1968.

Steffe, Leslie Philip. The Performance of First Grade Children in Four Levels of Conservation of Numerousness and Three I.Q. Groups When Solving Arithmetic Addition Problems. (University of Wisconsin, 1966.) *Dis. Abst.* 28A: 885-886; Aug. 1967.

Steinbrecher, Andrew William. Effects of Reversibility Training on Conservation Attainment. (University of Rochester, 1970.) *Dis. Abst. Int.* 31A: 1633-1634; Nov. 1970.

Stenger, Donald J. An Experimental Comparison of Two Methods of Teaching the Addition and Subtraction of Common Fractions in Grade Five. (University of Cincinnati, 1971.) *Dis. Abst. Int.* 32A: 3676; Jan. 1972.

Stephens, Lillian Sklaire. A Study of Aspects of Individualization in Informal British Primary Schools. (New York University, 1972.) *Dis. Abst. Int.* 33A: 1335; Oct. 1972.

Stephens, Lois Evans. What Concepts of Telling Time Can Be Developed by Kindergarten Children. (University of California, Los Angeles, 1964.) *Dis. Abst.* 25: 1793-1794; Sept. 1964.

Stephenson, Carl Gene. A Comparison of the Postulational Structure of the Synthetic, Tranformation and Vector Approaches to Plane Geometry. (University of Oklahoma, 1972.) *Dis. Abst. Int.* 33A: 962; Sept. 1972.

Stern, Alfred M. Intraclass Grouping of Low Achievers in Mathematics in the Third and Fourth Grades. (University of California, Los Angeles, 1971.) *Dis. Abst. Int.* 32A: 5539; Apr. 1972.

Stevens, Deon Orlo. Analysis of Change: A Comparative Study of Mathematics Textbooks Published for Elementary School Children for the Eight Year Period 1956 to 1964. (University of Oregon, 1965.) *Dis. Abst.* 26: 5139-5140; Mar. 1966.

Stevenson, Erwin Francis. An Analysis of the Technical and Semi-Technical Vocabulary Contained in Third Grade Mathematics Textbooks and First and Second Grade Readers. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 3012; Dec. 1971.

Stevenson, Robert Louis. The Achievement Gains in Mathematics of Seventh Grade Pupils When Achievement Grouping and Flexible Scheduling Are Employed in a Team Teaching Program. (New York University, 1966.) *Dis. Abst.* 27A: 3785-3786; May 1967.

Stewart, Norman Alton. An Exploratory Study of the Relationship of Length of Time Spent in Special Classes and Selected Aspects of Personality, Behavior, and Academic Achievement of Slow Learning Children. (Case Western Reserve University, 1968.) *Dis. Abst. Int.* 30A: 3803-3804; Mar. 1970.

Stiglmeier, John Joseph. A Longitudinal Study of Growth and Achievement of Academically-Talented and Non-Academically-Talented Public Elementary School Children in Three Basic Skill Areas. (Fordham University, 1964.) *Dis. Abst.* 25: 1761; Sept. 1964.

Stiglmeier, Lois Mireault. Teachers' Judgments of Pupils' Dependence/Self-Reliance Characteristics Mode of Instruction and Their Relationship to Achievement. (State University of New York at Albany, 1972.) *Dis. Abst. Int.* 34A: 1008; Sept. 1973.

Stillwell, Lois Jean Ryan. An Investigation of the Interrelationships Among Global Self Concept, Role Self Concept and Achievement. (Western Reserve University, 1965.) *Dis. Abst.* 27A: 682; Sept. 1966.

Stocks, Sister Tina Marie. The Development of an Instructional System Which Incorporates the Use of an Electric Desk Calculator as an Aid to Teaching the Concept of Long Division to Educable Mentally Retarded Adolescents. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 1049-1050; Sept. 1972.

Stokes, Charles Alphonso. Some Effects of Schooling, Age, Race and Socio-Economic Status on the Cognitive Development of Primary School Boys. (University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 3793; Feb. 1971.

Stommel, Lewis John. The Prediction of First Grade Achievement in Arithmetic by an Instrument Based on Piaget's Theory of the Formation of Number Concept. (University of California, Berkeley, 1966.) *Dis. Abst.* 27A: 2457; Feb. 1967.

Stone, Gwen Ellen Gibbs. Three Approaches to Assessing the Conservation of Weight Concept. (Iowa State University, 1972.) *Dis. Abst. Int.* 33A: 199; July 1972.

Stone, James Lewis. A Study of Cognitive Equivalence. (University of Mississippi, 1968.) *Dis. Abst.* 29A; 1054-1055; Oct. 1968.

Stottlemyer, Richard G. Secondary School Classroom Space Requirements--A Study to Examine Relationships Between Gross Room Area Per Pupil and Academic Achievement. (University of Maryland, 1965.) *Dis. Abst.* 27A: 90; July 1966.

Strahler, Violet Ruth. Relationship of Eight Predictive Factors to Success in Ninth Grade Science and Mathematics. (Indiana University, 1972.) *Dis. Abst. Int.* 33A: 4970; Mar. 1973.

Strauss, Sidney. The Role of Cognitive Conflict in Conservation Inducement. (University of California, Berkeley, 1967.) *Dis. Abst.* 29A: 1487; Nov. 1968.

Strickland, James Fisher, Jr. A Comparison of Three Methods of Teaching Selected Content in General Mathematics. (University of Georgia, 1968.) *Dis. Abst.* 29A: 4392; June 1969.

Strowbridge, Edwin David, Jr. Relationships Between Twelve Characteristics of Ability in Mathematics and Successful Achievement in an Eighth Grade SMSG Algebra Program. (University of Oregon, 1967.) *Dis. Abst.* 28A: 1014-1015; Sept. 1967.

Stuart, Alvin James. Effects Upon Pupil Performances in Arithmetic of Instructional Programs Differing in Amounts of Emphasis Upon Computational Structure and Verbal Problem Solving. (Ohio University, 1965.) *Dis. Abst.* 27A: 4058; June 1967.

Stubblefield, Betty Irene. The Development of the Mathematics Curriculum in the Chicago Public High Schools from 1856 to 1962. (Northwestern University, 1964.) *Dis. Abst.* 25: 3377-3378; Dec. 1964.

Studer, Marilyn Rita. The Relationship of Discovery Methods in Mathematics to Creative Thinking and Attitudes Toward Mathematics. (Ohio State University, 1971.) *Dis*. *Abst*. *Int*. 32A: 3816; Jan. 1972.

Stull, Lorren LaMar. Auditory Assistance of Reading as a Factor in Intermediate-Grade Pupils' Interpretations of Verbal Arithmetic Problems. (Pennsylvania State University, 1964.) *Dis*. *Abst*. 25: 7113; June 1965.

Sumagaysay, Lourdes Sonza. The Effects of Varying Practice Exercises and Relating Methods of Solution in Mathematics Problem Solving. (University of Toronto, 1970.) *Dis*. *Abst*. *Int*. 32A: 6751; June 1972.

Suydam, Marilyn N. An Evaluation of Journal-Published Research Reports on Elementary School Mathematics, 1900-1965. (Volumes I and II). (Pennsylvania State University, 1967.) *Dis*. *Abst*. 28A: 3387-3388; Mar. 1968.

Swafford, Jane Oliver. A Study of the Relationship Between Personality and Achievement in Mathematics. (University of Georgia, 1969.) *Dis*. *Abst*. *Int*. 30A: 5353; June 1970.

Swanson, Richard Alan. The Development and Evaluation of an Instructional Unit in Consumer Mathematics for Secondary School Low Achievers. (Ohio State University, 1972.) *Dis*. *Abst*. *Int*. 33A: 6080; May 1973.

Swart, William Lee. A Comparative Study of the Effects of High- and Low-Structure Approaches to Developing Problem-Solving Ability in Fourth Grade Children. (University of Michigan, 1969.) *Dis*. *Abst*. *Int*. 31A: 669; Aug. 1970.

Sweetland, Richard Carson. The Use of Mental Imagery Among Young Children in the Acquisition of Piaget's Principles of Conservation. (Utah State University, 1968.) *Dis*. *Abst*. 29B: 2624; Jan. 1969.

Swize, Lydia Marie. The Relationship Between Performance on Piagetian Conservation Tasks and Intelligence and Achievement in Educable Mentally Retarded Children. (University of Northern Colorado, 1971.) *Dis*. *Abst*. *Int*. 32A: 3806; Jan. 1972.

Swize, Myron Theodore. Prediction of Piagetian Conservation for Second Grade Mexican-American and Anglo-American Children. (University of Northern Colorado, 1971.) *Dis*. *Abst*. *Int*. 32A: 5624; Apr. 1972.

Swyers, William Randoll. An Exploratory Study of Auto-Instruction in Early Learning Experiences Utilizing Micro-Unit-Learning Models. (University of Georgia, 1969.) *Dis. Abst. Int.* 30A: 5353-5354; June 1970.

Szabo, Steven. Vector Trigonometry for Secondary Schools. (University of Illinois, 1969.) *Dis. Abst. Int.* 30A: 2733-2734; Jan. 1970.

Szetela, Walter Frank. The Effects of Test Anxiety and Success-Failure on Mathematics Performance in Grade Eight. (University of Georgia, 1970.) *Dis. Abst. Int.* 31A: 5949; May 1971.

Taback, Stanley Frederick. The Child's Concept of Limit. (Columbia University, 1969.) *Dis. Abst. Int.* 30A: 4162; Apr. 1970.

Tack, Robert S. The Effectiveness of the Westinghouse Learning Center Program Involving a Performance Contract on Reading and Mathematics Achievement of Educationally Deprived Children. (Brigham Young University, 1971.) *Dis. Abst. Int.* 32A: 4334; Feb. 1972.

Tajima, Yuri Ikeda. An Experimental Study of Number and Clock-Time Concepts of Preschool Children. (George Peabody College for Teachers, 1964.) *Dis. Abst.* 25: 6441; May 1965.

Taloumis, Thalia. The Relationship of Area Conservation to Area Measurement as Affected by Sequence of Presentation of Piagetian Area Tasks to Boys and Girls in Grades One Through Three. (New York University, 1973.) *Dis. Abst. Int.* 34B: 775-776; Aug. 1973.

Talton, Carolyn Flanagan. An Investigation of Selected Mental, Mathematical, Reading, and Personality Assessments as Predictors of High Achievers in Sixth Grade Mathematical Verbal Problem Solving. (Northwestern State University of Louisiana, 1973.) *Dis. Abst. Int.* 34A: 1008-1009; Sept. 1973.

Tanner, Glenda Lou. A Comparative Study of the Efficacy of Programed Instruction with Seventh Grade Low Achievers in Arithmetic. (University of Georgia, 1965.) *Dis. Abst.* 26: 6458-6459; May 1966.

Tanner, Verdelia Jane Lindsey. A Mathematics Program for Primary-Age Children: Concrete-Operational Approaches to Number Concepts. (Brigham Young University, 1972.) *Dis. Abst. Int.* 33A: 2674; Dec. 1972.

Tate, Bobby Gene. Effectiveness of Retardate Learning of Arithmetic as a Function of Mode of Stimulus Presentation by an Auto-Instructional Device. (University of North Carolina, 1964.) *Dis. Abst.* 25: 6401; May 1965.

Taylor, Harold Doyle. A Comparative Study of Compulsory Homework Versus Non-Compulsory Homework in Algebra I and Geometry I at Hillsdale High School. (University of Northern Colorado, 1971.) *Dis. Abst. Int.* 32A: 3876; Jan. 1972.

Taylor, Jerry Duncan. An Experimental Approach to the Development of the Real Number System Through Cauchy Sequences. (Florida State University, 1969.) *Dis. Abst. Int.* 30B: 5602-5603; June 1970.

Taylor, Loretta May. Independent Study Versus Presentation by Lecture and Discussion: A Comparative Study of Attitude and Achievement in Two Algebra I Classes. (University of Northern Colorado, 1971.) *Dis. Abst. Int.* 32A: 3877; Jan. 1972.

Taylor, Ralph Clinton. An Investigation of the Value of Drill on Arithmetic Fundamentals by Use of Tape Recordings Which Combine Techniques Developed in Language Laboratories with Principles of Programmed Learning. (University of Southern California, 1969.) *Dis. Abst. Int.* 30A: 1928; Nov. 1969.

Taylor, Robert Paul. Two Yes: A Study of Language and Mathematics Instruction in Selected Uganda Primary School Classrooms. (Columbia University, 1970.) *Dis. Abst. Int.* 31A: 4048; Feb. 1971.

Tener, Morton. Teaching Business Mathematics by Differentiated Methodologies. (Temple University, 1968.) *Dis. Abst. Int.* 30A: 1087; Sept. 1969.

Terry, Arthur Franklin, Jr. An Investigation of the Relationship Between the Mathematics Achievement of Sixth Grade Students Under the Direction of the Teacher in the Self-Contained Classroom and the Teacher Specialist. (University of Rochester, 1969.) *Dis. Abst. Int.* 30A: 3355-3356; Feb. 1970.

Thees, Sister Alice Matthew. Positions in the Philosophy of Mathematics That Form a Basis for a Modern Mathematics Program. (Columbia University, 1971.) *Dis. Abst. Int.* 32A: 680; Aug. 1971.

Thiessen, Richard Eugene. The Child's Concept of Convexity. (University of Oklahoma, 1971.) *Dis. Abst. Int.* 32A: 3677; Jan. 1972.

Thomas, Bonnie Brown. An Evaluation of Individually Prescribed Instruction (IPI) Mathematics in Grades Five and Six of the Urbana Schools. (Illinois State University, 1972.) *Dis. Abst. Int.* 33A: 1335; Oct. 1972.

Thomas, Buren G. Continuous Progress Advanced Algebra in the Lincoln Public Schools--A Study of Achievement and Attitude Toward Mathematics. (University of Nebraska, 1971.) *Dis. Abst. Int.* 32A: 6113-6114; May 1972.

Thomas, Halsey Laverne. An Analysis of Stages in the Attainment of a Concept of Function. (Columbia University, 1969.) *Dis. Abst. Int.* 30A: 4163-4164; Apr. 1970.

Thompson, Elton Noel. Readability and Accessory Remarks: Factors in Problem Solving in Arithmetic. (Stanford University, 1967.) *Dis. Abst.* 28A: 2464-2465; Jan. 1968.

Thompson, Jack Smith. Longitudinal Study of Student Self-Concept and Academic Achievement. (Utah State University, 1972.) Dis. Abst. Int. 33A: 4767-4768; Mar. 1973.

Thompson, John William, Jr. A Measurement of Achievement in Modern Mathematics in the Primary Grades. (North Texas State University, 1968.) *Dis. Abst.* 29B: 3839; Apr. 1969.

Thompson, Robert Bentley. An Exploration of the Effect of Increasing the Scope of the Examples in Programmed Learning Sequences. (University of Rochester, 1965.) *Dis. Abst.* 26: 1518-1519; Sept. 1965.

Thurner, Ronald David. Children's Perceptions of Linear Dot Patterns. (University of Minnesota, 1969.) *Dis. Abst. Int.* 31A: 1091; Sept. 1970.

Tidwell, Eleanor Louise. A Study of Three Methods of Teaching Associated with Certain Characteristics of Advanced High School Mathematics Students. (University of Miami, 1971.) *Dis. Abst. Int.* 32A: 5539-5540; Apr. 1972.

Tietz, Naunda Meier. A Comparison of Two Methods of Teaching Multiplication: Repeated-Addition and Ratio-to-One. (Oklahoma State University, 1968.) *Dis. Abst. Int.* 30A: 1060; Sept. 1969.

Tillman, Murray Howell. A Comparison of the Factor Structure of Blind and Normals on the Verbal WISC. (University of Georgia, 1966.) *Dis. Abst.* 27A: 3665-3666; Apr. 1967.

Tismer, Werner Dietrich. The Relationship Between Organizational Structure and the Academic Achievement and School Adjustment of Sixth Grade Pupils. (University of Minnesota, 1969.) *Dis. Abst. Int.* 30A: 2314; Dec. 1969.

Tom, Alan Roger. Children's Understanding of the Notion of Time in Grades Two, Four, and Six. (University of Wisconsin, 1966.) *Dis. Abst.* 28A: 886-887; Sept. 1967.

Toney, Jo Anne Staley. The Effectiveness of Individual Manipulation of Instructional Materials as Compared to a Teacher Demonstration in Developing Understanding in Mathematics. (Indiana University, 1968.) *Dis. Abst.* 29A: 1831-1832; Dec. 1968.

Toussaint, Nelly Adelina. Automaton and Competence Aspects of Piagetian Logical Concepts. (University of British Columbia (Canada), 1972.) *Dis. Abst. Int.* 34B: 864; Aug. 1973.

Townsend, James W. A Comparison of Teacher Style and Pupil Attitude and Achievement in Contrasting Schools—Open Space, Departmentalized, and Self-Contained. (University of Kansas, 1971.) *Dis. Abst. Int.* 32A: 5679-5680; Apr. 1972.

Trafton, Paul Ross. The Effects of Two Initial Instructional Sequences on the Learning of the Subtraction Algorithm in Grade Three. (University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 4049-4050; Feb. 1971.

Trask, Marvin Wellington. A Study on Interaction Between Aptitudes and Concrete vs. Symbolic Teaching Methods as Presented to Third-Grade Students in Multiplication and Division. (University of Oklahoma, 1972.) *Dis. Abst. Int.* 33A: 4253-4254; Feb. 1973.

Travers, Kenneth Joseph Dean. Forced-Choice Preferences for Problem-Solving Situations in Mathematics. (University of Illinois, 1965.) *Dis. Abst.* 26: 7161-7162; June 1966.

Traweek, Melvin Winston. The Relationship Between Certain Personality Variables and Achievement Through Programmed Instruction of Fourth Grade Arithmetic. (University of Alabama, 1963.) *Dis. Abst.* 25: 1762; Sept. 1964.

Traywick, Laura Ann McClendon Symank. Kindergarten Experience and Achievement of Elementary School Children. (University of Texas at Austin, 1971.) *Dis. Abst. Int.* 32A: 5481; Apr. 1972.

Treffinger, Donald John. The Effects of Programmed Instruction in Productive Thinking on Verbal Creativity and Problem Solving Among Pupils in Grades Four, Five, Six, and Seven. (Cornell University, 1969.) *Dis. Abst. Int.* 30A: 1031; Sept. 1969.

Tremblay, Clifford William. A Study of the Development of a Unit in Motion Geometry for Junior High School. (University of Illinois at Urbana-Champaign, 1972.) *Dis. Abst. Int.* 33A: 5483; Apr. 1973.

Tremel, Jerome George. A Study of the Relationships Among Basic Ability Factors and the Learning of Selected Operations on the Set of Integers. (Purdue University, 1963.) *Dis. Abst.* 24: 5259-5260; June 1964.

Trenary, Diana Simms. Effects of Grade Level, Sex, Cues and Feedback, Problem Type, and Question Direction on Children's Ability to Solve Verbal Transitivity Problems. (Syracuse University, 1971.) *Dis. Abst. Int.* 32B: 6040; Apr. 1972.

Trevino, Bertha Alicia Gamez. An Analysis of the Effectiveness of a Bilingual Program in the Teaching of Mathematics in the Primary Grades. (University of Texas, Austin, 1968.) *Dis. Abst.* 29A: 521-522; Aug. 1968.

Troutman, Andria Price. Development of a Specific Cognitive Observation System for the Analysis of Mathematics Teaching. (University of Florida, 1971.) *Dis. Abst. Int.* 33A: 668-669; Aug. 1972.

Truax, Robert Lloyd. A Study of Factors Which Influence Curriculum Change in Secondary School Mathematics. (Oklahoma State University, 1964.) *Dis. Abst.* 26: 1438; Sept. 1965.

Trueblood, Cecil Ross. A Comparison of Two Techniques for Using Visual-Tactual Devices to Teach Exponents and Non-Decimal Bases in Elementary School Mathematics. (Pennsylvania State University, 1967.) *Dis. Abst.* 29A: 190-191; July 1968.

Tryon, Louis A. A Comparison of a Modern Mathematics Program and Traditional Arithmetic in the Intermediate Grades. (University of Arizona, 1967.) *Dis. Abst.* 28B: 3792-3793; Mar. 1968.

Tucker, Joseph. A Junior High School Level Experiment on Developing Algebra Readiness by the Use of Finite Non-Numerical Algebraic Systems. (Auburn University, 1969.) *Dis. Abst. Int.* 31A: 1154; Sept. 1970.

Tucker, Ruth C. A Study of the Logical Abilities of Children as a Function of Mental and Chronological Age. (St. Louis University, 1970.) *Dis. Abst. Int.* 32A: 1369-1370; Sept. 1971.

Tupesis, Janis Arvaldis. Mathematics Learning as a Consequence of the Learner's Involvement in Interactive Problem-Solving Tasks. (University of Wisconsin, 1972.) Dis. Abst. Int. 34A: 126-127; July 1973.

Turner, James Stanley. The Spontaneous Oral Questions of Elementary School Children. (University of Alabama, 1972.) Dis. Abst. Int. 33A: 5023; Mar. 1973.

Turner, Mervyn Leonard. The Learning of Symmetry Principles and Their Transfer to Tests of Spatial Ability. (University of California, Berkeley, 1968.) Dis. Abst. 29A: 1140; Oct. 1968.

Tychsen, Alfred Balmer. An Experimental Comparison of Teacher-Paced Instruction and Student-Paced Instruction in the Teaching of Mathematics in the Public Elementary Schools in Greenwich, Connecticut. (University of Connecticut, 1971.) Dis. Abst. Int. 32A: 2382-2383; Nov. 1971.

Unkel, Esther Ruth. A Study of the Interaction of Socioeconomic Groups and Sex Factors with the Discrepancy Between Anticipated Achievement and Actual Achievement in Elementary School Mathematics. (Syracuse University, 1965.) Dis. Abst. 27A: 59; July 1966.

Uprichard, Albert Edward. An Experimental Study Designed to Determine the Most Efficient Learning Sequence of Three Set Relations in the Preschool Years. (Syracuse University, 1969.) Dis. Abst. Int. 30A: 5304-5305; June 1970.

Urbach, Donald Edward. A Comparison of Two Approaches and the Formalization of the Generalization of Formulas for Area Measure in Grade Five. (University of Michigan, 1972.) Dis. Abst. Int. 33A: 5991; May 1973.

Urwiller, Stanley LaVerne. A Comparative Study of Achievement, Retention, and Attitude Toward Mathematics Between Students Using Spiral Homework Assignments and Students Using Traditional Homework Assignments in Second Year Algebra. (University of Nebraska, 1971.) Dis. Abst. Int. 32A: 845; Aug. 1971.

Usiskin, Zalman Philip. The Effects of Teaching Euclidean Geometry Via Transformations on Student Achievement and Attitudes in Tenth-Grade Geometry. (University of Michigan, 1969.) Dis. Abst. Int. 31A: 688; Aug. 1970.

Vakil, Rama. Classroom Climate, Pupil Achievement and Attitude. (Case Western Reserve University, 1970.) Dis. Abst. Int. 32A: 1351; Sept. 1971.

Van Akin, Frank Everett. An Experimental Evaluation of Structure in Proof in High School Geometry. (Volumes I-III). (University of Minnesota, 1972.) Dis. Abst. Int. 33A: 1425; Oct. 1972.

Van de Walle, John Arthur. Attitudes and Perceptions of Elementary Mathematics Possessed by Third and Sixth Grade Teachers as Related to Student Attitude and Achievement in Mathematics. (Ohio State University, 1972.) Dis. Abst. Int. 33A: 4254-4255; Feb. 1973.

Verheul, Gustav Wilhelm. A Comparison of the Effects of Individually Prescribed Instruction and Conventional Textbook Instruction on Mathematics Learning of Selected Sixth Grade Students. (Florida State University, 1971.) Dis. Abst. Int. 32A: 4853-4854; Mar. 1972.

Vermaelen, Cherie Johnston. A Study of Changes in Semantic Meanings of Selected Concepts of High School Students Participating in Mathematics, Sciences, and Languages on a Pass-Fail Basis. (Northwestern State University of Louisiana, 1973.) Dis. Abst. Int. 34A: 1010; Sept. 1973.

Vest, Floyd Russell. Development of the "Model Construct" and Its Application to Elementary School Mathematics. (North Texas State University, 1968.) Dis. Abst. 29A: 3539; Apr. 1969.

Victor, Laurence Joseph. On Understanding Laws of Invariance. (University of Minnesota, 1970.) Dis. Abst. Int. 32B: 599; July 1971.

Vitello, Stanley John. The Effect of Three Variables on the Solution of Verbal Problems Requiring Quantitative Class Inclusion Among Educable Mentally Retarded Children. (University of Connecticut, 1972.) Dis. Abst. Int. 33A: 2795; Dec. 1972.

Volchansky, Paul Robert. The Effects of Two Mathematical Instruction Approaches on Analytical Cognition. (University of New Mexico, 1968.) Dis. Abst. 29A: 4396; June 1969.

Vos, Kenneth Eugene. A Comparison Study of the Effects of Three Instructional Strategies on Problem Solving Behaviors. (University of Minnesota, 1973.) Dis. Abst. Int. 34A: 2283; Nov. 1973.

Wadsworth, Barry James. The Effect of Peer Group Social Interaction on the Conservation of Number Learning of Kindergarten Students. (State University of New York at Albany, 1968.) Dis. Abst. 29B: 4372-4373; May 1969.

Wagman, Harriett Gordon. A Study of the Child's Conception of Area Measure. (Columbia University, 1968.) Dis. Abst. Int. 30A: 1350; Oct. 1969.

Walbesser, Henry Herman, Jr. A Programmed Investigation of Fixed-Ratio Schedules of Reinforcement Using the System of Integers Under Addition. (University of Maryland, 1965.) Dis. Abst. 27A: 4177; June 1967.

Walek, Bruce Peter. A Study of the Relationship Between Conceptual Tempo and Problem-Solving Abilities of Fourth-Grade Children. (University of Florida, 1972.) *Dis. Abst. Int.* 34A: 215-216; July 1973.

Walken, Christine Louise. Accelerating Classroom Attending Behaviors and Learning Rate. (University of Oregon, 1968.) *Dis. Abst. Int.* 30A: 1032; Sept. 1969.

Walker, Charles Everett. The Effect of Variations in Test Administration Conditions on Arithmetic Test Performance. (University of Rochester, 1969.) *Dis. Abst. Int.* 31A: 242-243; July 1970.

Wallace, David Campbell. The Impact of Computer Mathematics on the Learning of High School Trigonometry and Physics. (University of Texas at Austin, 1968.) *Dis. Abst.* 29A: 3540; Apr. 1969.

Wallender, Arnold Lee. An Experimental Study Comparing Three Strategies for Reducing Prompt and Knowledge of Results Information in a Programed Unit on Addition of Algebraic Fractions. (Southern Illinois University, 1971.) *Dis. Abst. Int.* 32A: 5118; Mar. 1972.

Walters, Ada Jane. A Comparison of Pupil Achievement and College Success in Two High School Programs: One Modular and One Traditional. (Duke University, 1972.) *Dis. Abst. Int.* 33A: 4771; Mar. 1973.

Wang, Margaret Li-Ching Chang. An Investigation of Selected Procedures for Measuring and Predicting Rate of Learning in Classrooms Operating Under a Program of Individualized Instruction. (University of Pittsburgh, 1968.) *Dis. Abst.* 29A: 1177; Oct. 1968.

Ward, Paul Evers. A Study of Pupil Achievement in Departmentalized Grades Four, Five, and Six. (University of Georgia, 1969.) *Dis. Abst. Int.* 30A: 4749; May 1970.

Ward, Ronald Allison. A Comparative Study of the Ability of Fourth Year High School Mathematics Students to Use the Principle of Mathematical Induction and the Well Ordering Principle to Prove Conjectures. (Florida State University, 1971.) *Dis. Abst. Int.* 32B: 5337; Mar. 1972.

Ward, William Franklin. The Development and Evaluation of a Unit on Sequential Continuity for Advanced High-School Students. (Florida State University, 1972.) *Dis. Abst. Int.* 33B: 3798; Feb. 1973.

Warner, Joan Marie Reffeitt. The Effects of Two Treatment Modes Upon Children Diagnosed as Having Learning Disabilities. (University of Illinois at Urbana-Champaign, 1973.) Dis. Abst. Int. 34A: 1142-1143; Sept. 1973.

Warner, John Ward. The National Defense Education Act of 1958 and Its Implications for the Teaching of Mathematics in Ohio. (Ohio State University, 1964.) Dis. Abst. 25: 6418; May 1965.

Wasden, Francis DelMar. A Comparative Analysis of the Difference in Achievement Between Students Educated in Traditional and Individualized Schools. (Brigham Young University, 1971.) Dis. Abst. Int. 32A: 1247; Sept. 1971.

Washburne, Robert Miles. CEMP--A Computer Enriched Mathematics Program. (Cornell University, 1969.) Dis. Abst. Int. 30A: 5179; June 1970.

Waters, William Meade, Jr. A Study to Test the Effectiveness of a Circular Geoboard as an Instrument for Teaching Selected Arc-Angle Theorems. (Florida State University, 1971.) Dis. Abst. Int. 32B: 6530-6531; May 1972.

Webb, Leland Frederick. Interaction Effects Between Selected Cognitive Abilities and Instructional Treatment in Algebra. (University of Texas at Austin, 1971.) Dis. Abst. Int. 32A: 5540; Apr. 1972.

Weber, Audra Wheatly. Introducing Mathematics to First Grade Children: Manipulative vs. Paper and Pencil. (University of California, Berkeley, 1969.) Dis. Abst. Int. 30A: 3372-3373; Feb. 1970.

Weeden, Robert Edward. A Comparison of the Academic Achievement in Reading and Mathematics of Negro Children Whose Parents Are Interested, Not Interested, or Involved in a Program of Suzuki Violin. (North Texas State University, 1971.) Dis. Abst. Int. 32A: 3582; Jan. 1972.

Weeks, Gerald Malcolm. The Effect of Attribute Block Training on Second and Third Graders Logical and Perceptual Reasoning Abilities. (University of Georgia, 1970.) Dis. Abst. Int. 31A: 5681-5682; May 1971.

Weeks, Ruth T. The Relationship of Grade, Sex, Socio-Economic Status, Scholastic Aptitude, and School Achievement to Formal Operations Attainment in a Group of Junior High School Students. (Kent State University, 1973.) Dis. Abst. Int. 34A: 2405; Nov. 1973.

Weiner, Susan Lipschitz. On the Development of More and Less. (Columbia University, 1971.) Dis. Abst. Int. 33B: 476; July 1972.

Weinstein, Howard Gilbert. Special Classes and Group Therapy: An Evaluation of Their Effects on Achievement and Behavior in a Public School Setting. (University of Maryland, 1971.) *Dis*. *Abst*. *Int*. 32A: 1930; Oct. 1971.

Weinstein, Marian Sue. An Investigation of Algorithm Justification in Elementary School Mathematics. (University of British Columbia (Canada), 1973.) *Dis*. *Abst*. *Int*. 34A: 3045; Dec. 1973.

Weinstein, Pauline Smith. An Analysis of Methodology in the Teaching of Arithmetic Concepts as Reflected in Textbooks Used in Canadian Schools Prior to 1890. (University of Oregon, 1973.) *Dis*. *Abst*. *Int*. 34A: 1069-1070; Sept. 1973.

Weise, Ingrid Bergstrom. Guidelines for a Supervisory Program Directed to Relating the Mathematics Programs of the Elementary and Junior High School. (University of Maryland, 1966.) *Dis*. *Abst*. 27A: 3686; May 1967.

Weiss, Beverly J. Phillips. Cognitive Style and Susceptibility to Alternate Forms of Conservation Training in Kindergarten Children. (Boston University Graduate School, 1973.) *Dis*. *Abst*. *Int*. 34B: 1736; Oct. 1973.

Werner, Sister Marijane. An Application of Critical Path Analysis to the Design of a Systematically Articulated Curriculum in Science and Mathematics for Secondary Schools. (Boston College, 1968.) *Dis*. *Abst*. 29A: 4209-4210; June 1969.

Wess, Roger George. An Analysis of the Relationship of Teachers' Attitudes as Compared to Pupils' Attitudes and Achievement in Mathematics. (University of South Dakota, 1969.) *Dis*. *Abst*. *Int*. 30A: 3844-3845; Mar. 1970.

Wesselman, Roy Lee. A Study of the Extent of Association Among Teacher Dogmatism, Educational Attitudes, and Pupil Achievement in Mathematics. (Texas Tech University, 1969.) *Dis*. *Abst*. *Int*. 31A: 88; July 1970.

West, Anita S. Wolfe. Development of a Computer-Administered Diagnostic College Placement Test in Mathematics. (University of Denver, 1969.) *Dis*. *Abst*. *Int*. 30B: 5154-5155; May 1970.

Westbrook, Helen Rose. Intellectual Processes Related to Mathematics Achievement at Grade Levels Four, Five, and Six. (University of Georgia, 1965.) *Dis*. *Abst*. 26: 6520; May 1966.

Weston, Leslie Donald. An Exploration of the Interrelationships Among Children's Arithmetic Achievement, Their Styles of Learning, Their Responsibility for Intellectual Academic Achievement, and Their Parents' Attitudes. (Wayne State University, 1968.) *Dis. Abst. Int.* 30A: 1087-1088; Sept. 1969.

Wheatley, Grayson H., Jr. Conservation, Counting and Cardination as Factors in Mathematics Achievement Among First-Grade Students. (University of Delaware, 1967.) *Dis. Abst.* 29A: 1481-1482; Nov. 1968.

Wheaton, Wilbur Dean. An Evaluation of an Individualized Learning Program in a California Union High School District. (University of Southern California, 1971.) *Dis. Abst. Int.* 32A: 5540-5541; Apr. 1972.

Wheeler, Larry Eugene. The Relationship of Multiple Embodiments of the Regrouping Concept to Children's Performance in Solving Multi-Digit Addition and Subtraction Examples. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 4260; Feb. 1972.

Wheeler, Otis V., Jr. The Relative Effectiveness of Two Different Mathematics and Science Programs Used with Disadvantaged First Grade Children. (University of Missouri-Columbia, 1971.) *Dis. Abst. Int.* 32A: 4931; Mar. 1972.

Whelan, Joseph Arthur. An Analysis of the Effect of Systematic Homework in Two Fourth Grade Subjects [English and Arithmetic]. (University of Connecticut, 1965.) *Dis. Abst.* 26: 5143; Mar. 1966.

Whipple, Robert M. A Statistical Comparison of the Effectiveness of Teaching Metric Geometry by the Laboratory and Individualized Instruction Approaches. (Northwestern University, 1972.) *Dis. Abst. Int.* 33A: 2699-2700; Dec. 1972.

Whitcomb, Barry Michael. The Effects of Differentially Reinforcing Stimuli on the Learning of Arithmetical Concepts Via Computer-Assisted Instruction. (University of Maryland, 1972.) *Dis. Abst. Int.* 33A: 509; Aug. 1972.

White, Bobby Joe. An Investigation of Kindergarten Experiences and Environment as Related to Children's Performance on Conservation Tasks of Quantity, Substance, and Number. (East Texas State University, 1971.) *Dis. Abst. Int.* 32A: 5053-5054; Mar. 1972.

White, Josie Nance. The Effectiveness of Purposive Teaching of Certain Reading Readiness Skills and Quantitative Concepts to Pre-School Children. (University of North Carolina, 1963.) *Dis. Abst. Int.* 31A: 4051-4052; Feb. 1971.

White, Virginia Taffinder. An Evaluation Model to Test Teaching-Learning Units for Individualized Instruction in Mathematics. (University of Washington, 1972.) Dis. Abst. Int. 33A: 2247-2248; Nov. 1972.

Whyte, Lillian Agnes. The Development of Classification Ability in Children of Below Average Intelligence. (Columbia University, 1969.) Dis. Abst. Int. 30A: 4700-4701; May 1970.

Whyte, Ronald Alexander. A Quasi-Longitudinal Study of the Relationship of Age of School Entrance to Achievement and Retention. (University of Michigan, 1971.) Dis. Abst. Int. 32A: 6077; May 1972.

Wickens, David Lee. A Program to Foster Quantitative Reasoning in Preschool Children. (Columbia University, 1968.) Dis. Abst. Int. 31A: 689-690; Aug. 1970.

Wiebe, Arthur John. The Comparative Effects of Three Methods of Utilizing Programmed Mathematics Materials with Low-Achievers. (Stanford University, 1966.) Dis. Abst. 27A: 1002-1003; Oct. 1966.

Wieters, Wade Cooper Heins. Denotative Meanings Assigned Indefinite Number Terms by Children Varying in Intelligence and Age. (University of Georgia, 1970.) Dis. Abst. Int. 31A: 5893-5894; May 1971.

Wilkinson, Arthur. An Analysis of the Effect of Instruction in Electronic Computer Programming Logic on Mathematical Reasoning Ability. (Lehigh University, 1972.) Dis. Abst. Int. 33A: 4204; Feb. 1973.

Wilkinson, Gerald Glendel. The Effect of Supplementary Materials Upon Academic Achievement in and Attitude Toward Mathematics Among Eighth Grade Students. (North Texas State University, 1971.) Dis. Abst. Int. 32A: 1994; Oct. 1971.

Wilkinson, Jack Dale. A Laboratory Method to Teach Geometry in Selected Sixth Grade Mathematics Classes. (Iowa State University, 1970.) Dis. Abst. Int. 31A: 4637; Mar. 1971.

Willcutt, Robert Ernest. Ability Grouping by Content Subject Areas in Junior High School Mathematics. (Indiana University, 1967.) Dis. Abst. 28A: 2152; Dec. 1967.

Williams, Alfred Horace. Mathematical Concepts, Skills, and Abilities of Kindergarten Entrants. (University of Southern California, 1964.) Dis. Abst. 25: 3333-3334; Dec. 1964.

Williams, Ann Weber. Teaching Mathematical Verbal Problems to "Middle Ability" Sixth Grade Readers with an Inquiry Method. (Pennsylvania State University, 1972.) Dis. Abst. Int. 34A: 1144; Sept. 1973.

Williams, Barbara Jean Ivory. Achievement as a Function of Modifying Empirically Determined Structure of Intellect Factors Among Black Second-Grade Pupils. (University of Washington, 1973.) Dis. Abst. Int. 34A: 1721; Oct. 1973.

Williams, Charlotte Leverett. Divergent Production Characteristics of Academically and Artistically Gifted Adolescents. (University of Georgia, 1966.) Dis. Abst. 27A: 2412-2413; Feb. 1967.

Williams, John Fox. The Development of the Study of Vectors for the Secondary School. (Columbia University, 1965.) Dis. Abst. 26: 4514-4515; Feb. 1966.

Williams, Kenneth Edwin. The Feasibility of the Use of Dimensional and Unit Analysis in Junior High School Science Instruction. (Indiana University, 1968.) Dis. Abst. Int. 30A: 77; July 1969.

Williams, Lucius Lee, Jr. The Effects of Independent Study During Summer Months on the Mathematics Achievement of Disadvantaged Fifth Graders. (Columbia University, 1972.) Dis. Abst. Int. 33A: 4211; Feb. 1973.

Williams, Macke Albert. Concept Development in Measurement at the Nursery School Level, with a New Manipulative Learning Aid. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4166-4167; Apr. 1970.

Williams, Peter Henry. The Effect of More Than One Teacher During a School Year on the Attitude and Achievement of Junior High Mathematics Students. (Indiana University, 1970.) Dis. Abst. Int. 31A: 5683; May 1971.

Williams, Tannis Margaret. Some Determinants of Young Children's Responses to Random Forms. (Purdue University, 1969.) Dis. Abst. Int. 31B: 2334; Oct. 1970.

Williamson, Bruce Merle. A Comparison of a Natural Algorithm with the Inversion Algorithm for Teaching the Division of Rational Numbers. (University of Minnesota, 1972.) Dis. Abst. Int. 33A: 150; July 1972.

Williford, Harold Johnson. A Study of Transformational Geometry Instruction in the Primary Grades. (University of Georgia, 1970.) Dis. Abst. Int. 31A: 6462; June 1971.

Willis, Eva Harrell. "Sesame Street" Viewing in Early Childhood in Relation to Readiness Skills and Achievement as Measured by Standardized Tests. (University of Northern Colorado, 1973.) Dis. Abst. Int. 34B: 2293; Nov. 1973.

Wills, Herbert, III. Transfer of Problem Solving Ability Gained Through Learning by Discovery. (University of Illinois, 1967.) Dis. Abst. 28A: 1319-1320; Oct. 1967.

Willson, George Hayden. A Comparison of Decimal-Common Fraction Sequence with Conventional Sequence for Fifth Grade Arithmetic. (University of Arizona, 1969.) Dis. Abst. Int. 30A: 1762; Nov. 1969.

Wilson, James William. Generality of Heuristics as an Instructional Variable. (Stanford University, 1967.) Dis. Abst. 28A: 2575; Jan. 1968.

Wilson, Jean Alice. The Effect of Teaching the Rationale of the Reciprocal Principle in the Division of Fractions Through Programmed Instruction. (University of Pittsburgh, 1967.) Dis. Abst. 28A: 2926; Feb. 1968.

Wilson, John Warner. The Role of Structure in Verbal Problem-Solving in Arithmetic: An Analytical and Experimental Comparison of Three Problem-Solving Programs. (Syracuse University, 1964.) Dis. Abst. 25: 6442-6443; May 1965.

Winzenread, Marvin Russell. Consumable Materials: A Quasi-Programmed Procedure Experimentally Tested in the Inner-City Junior High School Mathematics Classroom. (Indiana University, 1969.) Dis. Abst. Int. 30A: 4343; Apr. 1970.

Witters, Donald Rutt. Effect of Accuracy and Work Quality Requirements on Task Choice and Performance Accuracy. (Arizona State University, 1969.) Dis. Abst. 29A: 3478; Apr. 1969.

Wiviott, Suzanne Pasch. Bases of Classification of Geometric Concepts Used by Children of Varying Characteristics. (University of Wisconsin, 1970.) Dis. Abst. Int. 31A: 5865; May 1971.

Wixson, Eldwin Atwell, Jr. The Effects of a Mathematical Approach to Teaching Two Topics in High School Biology on Student Achievement and Attitudes. (University of Michigan, 1969.) Dis. Abst. Int. 31A: 1157; Sept. 1970.

Wolfe, Lee R. The Effects of Space Visualization Training on Spatial Ability and Arithmetic Achievement of Junior High School Students. (State University of New York at Albany, 1970.) Dis. Abst. Int. 31A: 2801; Dec. 1970.

Wolff, Bernard Ryan. An Analysis and Comparison of Individualized Instructional Practices in Arithmetic in Graded and Nongraded Elementary Classrooms in Selected Oregon School Districts. (University of Oregon, 1968.) Dis. Abst. 29A: 4397; June 1969.

Wolff, Robert Francis. A Feasibility Study on the Construction of a Diagnostic Test on Proper Fractions to be Administered, Scored and Interpreted by a Computer. (Lehigh University, 1968.) Dis. Abst. 29A: 3787-3788; May 1969.

Wood, Lavinia Roughton. A Study of the Relationship of Performance in Written Composition to Performance in Mathematical Reasoning in Elementary School Children. (University of Georgia, 1967.) Dis. Abst. 28A: 3913; Apr. 1968.

Wood, Stillman Wayne. A Study of Selected Student, Instructional, and Achievement Variables Within a Program of Individually Prescribed Instruction in Mathematics for Junior High Educable Retardates. (University of Oregon, 1972.) Dis. Abst. Int. 33A: 6760-6761; June 1973.

Woodall, Parker Glenn. A Study of Pupils' Achievements and Attitudes in the School Mathematics Study Group and the Traditional Mathematics Programs of the Lewiston School District, 1960-1965. (University of Idaho, 1966.) Dis. Abst. 27B: 4040-4041; May 1967.

Woods, Don Paul. A Study of Elementary Student Achievement and In-Service Training to Develop Curriculum in Danville, Illinois. (Illinois State University, 1972.) Dis. Abst. Int. 33A: 2059; Nov. 1972.

Woodward, Jean W. Identification of Mathematical Concepts Causing Learning Difficulties to Fifth-Grade Students. (University of Houston, 1967.) Dis. Abst. 28A: 2467-2468; Jan. 1968.

Wooldridge, Glyn Keith. A Formative Evaluation Model and Its Application to a Pre-Calculus Course in Probability and Statistics. (University of Texas at Austin, 1971.) Dis. Abst. Int. 32B: 7183-7184; June 1972.

Wozniak, Robert Howard. Level of Verbal Pre-Training, Perceptual Salience of Internal Relation, and Type of Stimulus Display as Determinants of Second-, Fourth-, and Sixth-Grade Children's Judgments of Comparative Fullness. (University of Michigan, 1971.) Dis. Abst. Int. 32B: 4272; Jan. 1972.

Wriggle, Lawrence Kay. The Amount and Nature of Teacher Help Necessary for Optimum Achievement Through Use of Programed Learning Devices. (Washington State University, 1964.) Dis. Abst. 25: 5802-5803; Apr. 1965.

Wright, Jone Perryman. A Study of Children's Performance on Verbally Stated Problems Containing Word Clues and Omitting Them. (University of Alabama, 1968.) Dis. Abst. 29B: 1770; Nov. 1968.

Wright, Robert Earl. A Comparison of Student Achievement in Modern Mathematics and Traditional Mathematics in Relation to Ability Grouping. (Arizona State University, 1965.) Dis. Abst. 26: 3178; Dec. 1965.

Wunderlich, Kenneth Waldie. The Effects of Questions of Differing Cognitive Levels Interspersed in Mathematics Text Material. (University of Texas at Austin, 1972.) Dis. Abst. Int. 33A: 4820; Mar. 1973.

Wynn, Robert Sawtelle, Jr. A Study of the Relative Efficiency of Three Methods of Teaching Percentage in Grade Seven. (Colorado State College, 1965.) Dis. Abst. 26: 5313; Mar. 1966.

Wynroth, Lloyd Z. Learning Arithmetic by Playing Games. (Cornell University, 1970.) Dis. Abst. Int. 31A: 942-943; Sept. 1970.

Yasui, Roy Yoshio. An Analysis of Algebraic Achievement and Mathematical Attitude Between the Modern and Traditional Mathematics Programs in the Senior High School: A Longitudinal Study. (University of Oregon, 1967.) Dis. Abst. 28A: 4967-4968; June 1968.

Yawin, Robert Arthur. The Effects of an Independent Study Program Upon Selected High School Students' Attitudes Toward High School, School Subjects, and Classroom Procedures. (University of Connecticut, 1972.) Dis. Abst. Int. 33A: 5484; Apr. 1973.

Yawkey, Thomas Daniel. A Test of Piaget's Notions of Conservation of Number on Tasks of Inequality. (University of Illinois at Urbana-Champaign, 1970.) Dis. Abst. Int. 31A: 4566; Mar. 1971.

Yeager, John Leroy. Measures of Learning Rates for Elementary School Students in Mathematics and Reading Under a Program of Individually Prescribed Instruction. (University of Pittsburgh, 1966.) Dis. Abst. 27A: 2081; Jan. 1967.

Yens, David Peter. The Interaction Between Reward Preference and Task Difficulty in a Computer Assisted Instruction Setting. (Pennsylvania State University, 1972.) Dis. Abst. Int. 33A: 6742-6743; June 1973.

Yonally, James Lewis. Effect of a Preschool Experience on the Academic Achievement and Social Adjustment of Kindergarten and Second-Grade Children. (University of Kansas, 1972.) Dis. Abst. Int. 33A: 2679-2680; Dec. 1972.

Young, Beverly Sue. Inducing Conservation of Number, Weight, Volume, Area, and Mass in Pre-School Children. (University of Iowa, 1968.) *Dis. Abst.* 29A: 3885-3886; May 1969.

Young, James Clark. An Evaluation of a Pontoon Transitional Design--Ninth Grade Low Ability Level Students. (University of Southern California, 1969.) *Dis. Abst. Int.* 30A: 1931; Nov. 1969.

Young, James Heyward, Jr. The Use of a Computer-Based Resource Guide to Pre-Plan a Unit of Instruction and to Develop Student Attitudes Toward Mathematics. (State University of New York at Buffalo, 1970.) *Dis. Abst. Int.* 31A: 1700; Oct. 1970.

Young, Robert Manning. Perceptions of Selected Groups of Educators with Regard to the Usefulness of a Computer in Education. (Wayne State University, 1972.) *Dis. Abst. Int.* 33A: 2059-2060; Nov. 1972.

Zahn, Karl George. The Optimum Ratio of Class Time To Be Allotted to Developmental Activities and to Individual Practice in Teaching Arithmetic. (University of Colorado, 1965.) *Dis. Abst.* 26: 6459; May 1966.

Zamboni, Floyd Frank. A Study of the Effect of Two Different Classroom Procedures Upon Student Achievement, Anxiety and Attitudes of Second Year High School Algebra II/Trigonometry Students. (Colorado State College, 1968.) *Dis. Abst.* 29B: 3004-3005; Feb. 1969.

Zander, Betty Jo Jackson. Junior High Students View Themselves as Learners: A Comparison Among Eighth Grade Students. (University of Minnesota, 1973.) *Dis. Abst. Int.* 34A: 2254-2255; Nov. 1973.

Zediker, Phillip Loren. The Application to Above Average Sixth Grade Students of Programmed Instruction for High School Equivalency Test Preparation. (University of Illinois at Urbana-Champaign, 1971.) *Dis. Abst. Int.* 32A: 5628-5629; Apr. 1972.

Ziebarth, Raymond Allan. The Effect of Experimental Curricula on Mathematics Achievement in High School. (University of Minnesota, 1963.) *Dis. Abst.* 24: 4593; May 1964.

Ziegenfuss, Penny Low. Development and Training of Time Concepts in Young Children. (Pennsylvania State University, 1972.) *Dis. Abst. Int.* 33A: 5420-5421; Apr. 1973.

Zilisch, Jean Miller. A Developmental Investigation of Classification Behavior of Normal and Retarded Children Under Work and Play Conditions. (University of Minnesota, 1971.) Dis. Abst. Int. 32A: 4438; Feb. 1972.

Zinn, Bennie Ardist, Jr. Extending the Teaching of Multiplication Facts at the Seventh Grade Level. (Texas A & M University, 1971.) Dis. Abst. Int. 32A: 4263; Feb. 1972.

Zoet, Charles Jay. The Effect of Increased Attention to Exponents on the Acquisition of Logarithmic Concepts and Skills in Algebra II. (University of Michigan, 1972.) Dis. Abst. Int. 33A: 6081; May 1973.

Zur, Mordehai. Implications of the Recent Mathematics Reform for Grades 7-9 in the United States for the Israeli Elementary and Secondary Schools. (Columbia University, 1966.) Dis. Abst. 28A: 4436; May 1968.

3. MATHEMATICS TEACHER EDUCATION
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ARTICLES

Adams, Sam and Von Brock, Robert C. The Development of the A-V Scale of Attitudes Toward Mathematics. J. Ed. Meas. 4: 247-248; Winter 1967.

Allen, Ernest Edgar. Selected Characteristics of Junior High Level Mathematics Teachers in Colorado. Colo. J. Ed. Res. 10: 59; Spring 1971.

Bartel, Elaine V. Supervision in Mathematics. Arith. Teach. 20: 24-26; Jan. 1973.

Bassler, Otto C. An Investigation of the Effect of Types of Exercises on Mathematics Learning. Math. Teach. 59: 266-273; Mar. 1966.

Behr, Merlyn J. Interactions Between "Structure-of-Intellect" Factors and Two Methods of Presenting Concepts of Modular Arithmetic -- A Summary Paper. J. Res. Math. Ed. 1: 29-42; Jan. 1970.

Bompart, Bill. An Undergraduate Program Based on Certification Requirements. Sch. Sci. Math. 70: 805-812; Dec. 1970.

Brown, Gerald W. An In-Service Program in Arithmetic. El. Sch. J. 66: 75-80; Nov. 1965.

Burnett, Collins and MacMinn, Paul. A Comparison of Teacher Education Students and Non-Teacher Education Students on Measures of Academic Aptitude and Achievement. J. Teach. Ed. 17: 312-316; Fall 1966.

Byrkit, Donald R. Using Televised and Aural Materials for Mathematics Teachers. Math. Teach. 64: 519-524; Oct. 1971.

Chapin, June R. Patterns of Characteristics of Successful Mathematics Teachers and Those Who Leave the Profession: A Case Study. Math. Teach. 63: 159-163; Feb. 1970.

Collier, C. Patrick. Prospective Elementary Teacher's Intensity and Ambivalence of Beliefs about Mathematics and Mathematics Instruction. J. Res. Math. Ed. 3: 155-163; May 1972.

Committee on the Undergraduate Program in Mathematics. Preparation in Mathematics for Elementary School Teachers. Arith. Teach. 14: 198-199; Mar. 1967.

Cooney, Thomas J. and Henderson, Kenneth B. Ways Mathematics Teachers Help Students Organize Knowledge. J. Res. Math. Ed. 3: 21-31; Jan. 1972.

Creswell, John L. The Competence in Arithmetic of Prospective Georgia Elementary Teachers. Arith. Teach. 11: 248-250; Apr. 1964.

Creswell, John L. How Effective are Modern Mathematics Workshops? Arith. Teach. 14: 205-208; Mar. 1967.

Cruikshank, Douglas E. Preservice Textbooks: An Analysis. Arith. Teach. 16: 479-482; Oct. 1969.

Dessart, Donald J. Characteristics and Service Loads of Mathematics and Science Teachers. Am. Math. Monthly 71: 550-552; May 1964.

Dutton, Wilbur H. Prospective Elementary School Teachers' Understanding of Arithmetical Concepts. J. Ed. Res. 58: 362-365; Apr. 1965.

Dutton, Wilbur H. Individualizing Instruction in Elementary School Mathematics for Prospective Teachers. Arith. Teach. 13: 227-231; Mar. 1966.

Dutton, Wilbur H. and Cheney, Augustine P. Pre-Service and In-Service Education of Elementary School Teachers in Arithmetic. Arith. Teach. 11: 192-198; Mar. 1964.

Dutton, Wilbur H. and Hammond, H. Reginald. Two In-Service Mathematics Programs for Elementary School Teachers. Calif. J. Ed. Res. 17: 63-67; Mar. 1966.

Dwight, Leslie A. TV In-Service Mathematics Programs for Elementary Teachers. Arith. Teach. 12: 644, 656; Dec. 1965.

Elsner, Priscilla Jo. Criterion Referenced Assessment and Its Classroom Uses as Viewed by Teachers. Sch. Sci. Math. 73: 730-734; Dec. 1973.

Fisher, John J. Extent of Implementation of C.U.P.M., Level I Recommendations. Arith. Teach. 14: 194-197; Mar. 1967.

Fisher, J.J. The Extent of Implementation of Level I and Level III CUPM Recommendations, Panel on Teacher Training. Am. Math. Monthly 75: 290-292; Mar. 1968.

Flora, Ben V., Jr. Diagnosing Selected Behavior Characteristics of Teachers of Secondary School Mathematics. *J. Res. Math. Ed.* 3: 7-20; Jan. 1972.

Gibney, Thomas C.; Ginther, John L.; and Pigge, Fred. The Mathematical Understandings of Preservice and In-service Teachers. *Arith. Teach.* 17: 155-162; Feb. 1970.

Gibney, Thomas C.; Ginther, John L.; and Pigge, Fred L. What Influences the Mathematical Understanding of Elementary School Teachers? *El. Sch. J.* 70: 367-372; Apr. 1970.

Gibney, Thomas C.; Ginther, John L.; and Pigge, Fred L. A Comparison of the Number of Mathematics Courses Taken By Elementary Teachers and Their Mathematical Understandings. *Sch. Sci. Math.* 70: 377-381; May 1970.

Goff, G.K. An Oklahoman Reports. *Am. Math. Monthly* 75: 1004-1005; Nov. 1968.

Hanna, Gerald S. An Empirical Comparison of Three Geometry Aptitude Tests. *Sch. Sci. Math.* 68: 8-10; Jan. 1968.

Hardgrove, Clarence E. and Jacobson, Bernard. CUPM Report on the Training of Teachers of Elementary School Mathematics. *Arith. Teach.* 11: 89-93; Feb. 1964.

Harper, E. Harold. Elementary Teachers' Knowledge of Basic Arithmetic Concepts and Symbols. *Arith. Teach.* 11: 543-546; Dec. 1964.

Hernandez, Norma G. A Model of Classroom Discourse for Use in Conducting Aptitude-Treatment Interaction Studies. *J. Res. Math. Ed.* 4: 161-169; May 1973.

Hicks, Randall C. and Perrodin, Alex G. Topics in Mathematics for Elementary School Teachers. *Sch. Sci. Math.* 47: 739-744; Nov.1967.

Hosford, Philip L. The Right to Figure. *Contemporary Ed.* 44: 262-266; April 1973.

Houston, Samuel R. and Bentzen, Mary M. Teaching Effectiveness in Culturally Drprived Junior High Mathematics Classes. *J. Exp. Ed.* 38: 73-78; Fall 1969.

Huettig, Alic and Newell, John M. Attitudes Toward Introduction of Modern Mathematics Program by Teachers with Large and Small Number of Years' Experience. *Arith. Teach.* 13: 125-130; Feb. 1966.

Hunkler, Richard. A New Look at the Implementation of the CUPM Level I Recommendations. *Sch. Sci. Math.* 71: 423-425; May 1971.

Hunkler, Richard. An Evaluation of a Short-Term In-Service Mathematics Program for Elementary School Teachers. *Sch. Sci. Math.* 71: 650-654; Oct. 1971.

Hunkler, Richard and Quast, W.G. Improving the Mathematics Attitudes of Prospective Elementary School Teachers. *Sch. Sci. Math.* 72: 709-714; Nov. 1972.

Inskeep, James E., Jr. Pre-Service Preparation to Teach Elementary School Mathematics. *Sch. Sci. Math.* 68: 43-51; Jan. 1968.

Kane, Robert B. Attitudes of Prospective Elementary School Teachers Toward Mathematics and Three Other Subject Areas. *Arith. Teach.* 15: 169-175; Feb. 1968.

Kennedy, Leonard M. and Alves, Robert. In-Service Education for Elementary School Mathematics Teachers: Responses to Nine Questions. *Arith. Teach.* 11: 506-509; Nov. 1964.

Kenney, Russell A. Mathematical Understandings of Elementary School Teachers. *Arith. Teach.* 12: 431-442; Oct. 1965.

Kerr, R.D.; Alspaugh, John W.; and Reys, Robert E. A Study of Selected Characteristics of Secondary Mathematics Teachers. *Sch. Sci. Math.* 69: 781-790; Dec. 1969.

King, Robert W. Using Programmed Instruction to Investigate the Effects of Group Interaction on Learning Mathematics. *Math. Teach.* 62: 393-398; May 1969.

Kipps, Carol. Elementary Teachers' Ability to Understand Concepts Used in New Mathematics Curricula. *Arith. Teach.* 15: 367-370; Apr. 1968.

Kneitz, Margaret H. A Study of Secondary Mathematics Teachers: What Influences Them to Leave the Profession? *Am. Math. Monthly* 78: 1012-1016; Nov. 1971.

Leake, Lowell, Jr. What Every Mathematics Teacher Ought to Read (Seventeen Opinions). *Math. Teach.* 65: 637-641; Nov. 1972.

Lightner, J.E. and Gilman, Sister John Frances. A Televised Course for Elementary Teachers. *Am. Math. Monthly* 78: 537-542; May 1971.

Lilge, A.A. A Description of a Group-Learning Experience. *Arith. Teach.* 20: 51-55; Jan. 1973.

Litwiller, Bonnie H. Enrichment: A Method of Changing the Attitudes of Prospective Elementary Teachers Toward Mathematics. Sch. Sci. Math. 70: 345-350; Apr. 1970.

Lyng, Merwin J. Factors Relating to a Teacher's Knowledge of Contemporary Mathematics. Math. Teach. 61: 695-697; Nov. 1968.

Martin, Bernard L. Spatial Visualization Abilities of Prospective Mathematics Teachers. J. Res. Sci. Teaching 5: 11-19; 1967-68.

Melson, Ruth. How Well Are Colleges Preparing Teachers for Modern Mathematics? Arith. Teach. 12: 51-53; Jan. 1965.

Moody, William B. and Wheatley, Grayson H. Evaluating Mathematics Courses for Prospective Elementary School Teachers. Sch. Sci. Math. 69: 703-707; Nov. 1969.

Phillips, Clarence. Approach to the Training of Prospective Elementary Mathematics Teachers. J. Teach. Ed. 19: 293-297; Fall 1968.

Pigge, Fred and Brune, Irvin H. Lectures Versus Manuals in the Education of Elementary Teachers. Arith. Teach. 16: 48-52; Jan. 1969.

Porterfield, O.V. Ambiguities in Teaching Arithmetic. Arith. Teach. 12: 348-351; May 1965.

Reys, Robert E. Are Elementary School Teachers Satisfied with Their Mathematics Preparation? Arith. Teach. 14: 190-193; Mar. 1967.

Reys, Robert E. Mathematical Competencies of Elementary Education Majors. J. Ed. Res. 61: 265-266; Feb. 1968.

Reys, Robert E. Mathematical Competencies of Preservice Elementary School Teachers. Sch. Sci. Math. 68: 302-308; Apr. 1968.

Reys, Robert E. and Delon, Floyd G. Attitudes of Prospective Elementary School Teachers Towards Arithmetic. Arith. Teach. 15: 363-366; Apr. 1968.

Reys, R.E.; Kerr, R.D.; and Alspaugh, J.W. Mathematics Training of Secondary Mathematics Teachers. Am. Math. Monthly 76: 933-937; Oct. 1969.

Riedesel, C. Alan and Suydam, Marilyn N. Computer-Assisted Instruction: Implications for Teacher Education. Arith. Teach. 14: 24-29; Jan. 1967.

Robold, Alice I. College Instructors of Mathematics for Elementary-School Teachers. Am. Math. Monthly 73: 191-192; Feb. 1966.

Sassenrath, Julius M. and Welch, Ronald C. Teacher Preparation and Teaching Tasks. Calif. J. Ed. Res. 19: 112-120; May 1968.

Schmalz, Rosemary. Categorization of Questions That Mathematics Teachers Ask. Math. Teach. 66: 619-626; Nov. 1973.

Shafer, Dale M. A Proposal for the Mathematics Method Course. Math. Teach. 62: 623-627; Dec. 1969.

Sherrill, James M. In-Service Mathematics Education as Viewed by Elementary School Teachers. Sch. Sci. Math. 71: 615-618; Oct. 1971.

Sherrill, James M. Pre-Service Mathematics Education: What is Required and What Elementary School Teachers Feel Should Be Required. Sch. Sci. Math. 73: 224-228; March 1973.

Skypek, Dora Helen. A Comparison of the Mathematical Competencies of Education and Non-education Majors Enrolled in a Liberal Arts College. Am. Math. Monthly 72: 770-773; Sept. 1965.

Smith, Frank. Prospective Teachers' Attitudes Toward Arithmetic. Arith. Teach. 11: 474-477; Nov. 1964.

Smith, Frank. How Well are Colleges Preparing Teachers for Modern Mathematics? -- An Answer. Arith. Teach. 14: 200-202; Mar. 1967.

Todd, Robert M. A Mathematics Course for Elementary Teachers: Does It Improve Understanding and Attitude? Arith. Teach. 13: 198-202; Mar. 1966.

Wardrop, R.F. The Effect of Geometric Enrichment Exercises on the Attitudes Toward Mathematics of Prospective Elementary Teachers. Sch. Sci. Math. 72: 794-800; Dec. 1972.

Weaver, J. Fred. Levels of Geometric Understanding: An Exploratory Investigation of Limited Scope. Arith. Teach. 13: 322-332; Apr. 1966.

Weaver, J. F. Nonmetric Geometry and the Mathematical Preparation of Elementary-School Teachers. Am. Math. Monthly 73: 1115-1121; Dec. 1966.

Whitman, Nancy C. In-Service Education and the Learning of Conceptual Mathematics. Arith. Teach. 13: 149-151; Feb. 1966.

Wiersma, William. A Cross-National Comparison of Academic Achievement of Mathematics Majors Preparing to Teach in the Secondary Schools. Sch. Sci. Math. 67: 389-394; May 1967.

Wiersma, William. A Cross-National Comparison of Academic and Affective Characteristics of Prospective Secondary School Teachers. J. Ed. Meas. 9: 57-66; Spring 1972.

Wolfe, Richard Edgar. Strategies of Justification Used in the Classroom by Teachers of Secondary School Mathematics. Sch. Sci. Math. 72: 334-338; Apr. 1972.

Wong, Ruth E.M. Geometry Preparation for High School Mathematics Teachers. Am. Math. Monthly 77: 70-78; Jan. 1970.

4. MATHEMATICS TEACHER EDUCATION
1964-1973

DISSERTATIONS

Abshire, Myrtis Jane. A Study of the Preservice Education, Inservice Education, and Problems and Needs Identified by Elementary School Teachers of Mathematics. (McNeese State University, 1973.) Dis. Abst. Int. 34A: 3196; Dec. 1973.

Adhikary, Poorna Kanta. Instructional Effect on Question Asking Behavior of Prospective Peace Corps Science and Mathematics Volunteer Teachers. (Indiana University, 1972.) Dis. Abst. Int. 33A: 4993; March 1973.

Albig, David L. A Study of the Effects of Verbalization on Concept Formation in Mathematics. (The Florida State University, 1973.) Dis. Abst. Int. 34A: 632; Aug. 1973.

Allen, Ernest Edgar. Selected Characteristics of Junior High Level Mathematics Teachers in Colorado. (University of Northern Colorado, 1970.) Dis. Abst. Int. 31B: 7412; June 1971.

Alspaugh, John William. A Survey of Secondary Mathematics Programs in Missouri with Emphasis on Content, Procedures, and Preparation of Teachers. (University of Missouri, 1965.) Dis. Abst. 26: 5259-5260; Mar. 1966.

Ames, John H. An Evaluation of Mathematics Concepts of Prospective Elementary Teachers at California State College Long Beach. (University of California, Los Angeles, 1971.) Dis. Abst. Int. 32A: 3830; Jan. 1972.

Annis, Richard Hayes. Applicability Ratings of College Mathematics Courses for Secondary School Mathematics Teacher Preparation. (The University of North Dakota, 1965.) Dis. Abst. 26: 5889-5890; Apr. 1966.

Backman, Carl Adolph. A Study of Teacher Characteristics Related to Teaching Geometry in the Elementary School. (Syracuse University, 1969.) Dis. Abst. Int. 31A: 258-259; July 1970.

Bailey, Howard Lloyd. A Study of the Competence in Geometry of Undergraduate Elementary Education Majors. (Colorado State College, 1969.) Dis. Abst. Int. 30A: 4297-4298; Apr. 1970.

Banning, Margaret Neoma Botkin. The Preparation of Prospective Teachers in the Geometry Content of Elementary School Mathematics Texts. (Montana State University, 1971.) *Dis. Abst. Int.* 32B: 5300: Mar. 1972.

Barbeau, Alice Mae. A Historical Approach to the Theory of Groups. (The University of Wisconsin, 1968.) *Dis. Abst.* 29B: 4737; June 1969.

Barnard, James Allan. A Comparison of Two Approaches of Understanding Integer Addition by Prospective Elementary Teachers at Oregon College of Education. (University of Illinois at Urbana-Champaign, 1972.) *Dis. Abst. Int.* 33A: 5593; April 1973.

Barnes, Ward Ewing. A Study of the Variables That Influence Secondary Public School Mathematics Teachers in Pennsylvania to Remain in or Leave the Teaching Profession During 1968-69. (University of Pittsburgh, 1969.) *Dis. Abst. Int.* 31A: 50-51; July 1970.

Bassler, Otto Call. A Comparison of Two Types of Exercises in Teaching Mathematical Concepts to Prospective Elementary School Teachers. (University of Maryland, 1966.) *Dis. Abst.* 27A: 978; Oct. 1966.

Batker, Kenneth Edward. Some Multiple Channel Audiovisual Materials in Mathematics and a Comparison of Their Use as Study Aids With Conventional Textbook Assignments. (University of Colorado, 1971.) *Dis. Abst. Int.* 32A: 6774-6775; June 1972.

Baur, Gregory Ralph. A Study of the Effects of a Creative Classroom, Creative Problems, and Mathematics Educators on the Creative Ability in Mathematics of Prospective Elementary Teachers. (Indiana University, 1970.) *Dis. Abst. Int.* 31A: 5895; May 1971.

Bazik, A. Matthew. Evaluation of a Plan for Individualizing Instruction Through Informing Students of Behavioral Objectives in a Mathematics Course for Prospective Elementary School Teachers at Elmhurst College. (Northwestern University, 1972.) *Dis. Abst. Int.* 33A: 5594; April 1973.

Beamer, James Edward. A Model for the Evaluation of Educational Projects. (The University of Nebraska, 1971.) *Dis. Abst. Int.* 32A: 2295; Nov. 1971.

Beattie, Ian David. The Effects of Supplementary Programmed Instruction in Mathematics on the Mathematical Attitudes and Abilities of Prospective Teachers. (Southern Illinois University, 1969.) *Dis. Abst. Int.* 30A: 3343; Feb. 1970.

Beers, George S. Some Effects of the Use of Supervised Study with Off-Campus In-Service Classes in Mathematics for Teachers. (The University of Florida, 1967.) *Dis. Abst.* 29: 827; Sept. 1968.

Bennett, Gene Wiley. The Role of Topology in the Preparation of Secondary Mathematics Teachers. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 1372; Sept. 1971.

Berg, Milton Edward. A Plan for the Mathematical Education of Teachers of Secondary School Mathematics in the State of Oklahoma. (Columbia University, 1964.) *Dis. Abst.* 26: 207; July 1965.

Bertram, Charles John. Selected Characteristics of Mathematics Teachers in Indiana Public Secondary Schools. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 3132; Dec. 1971.

Biggs, Nancy Chisholm. A Survey of the Mathematics Education of West Tennessee Elementary School Teachers. (Memphis State University, 1969.) *Dis. Abst. Int.* 30A: 598-599; Aug. 1969.

Boliver, David Edward. Objectives in Mathematics for the Non-College-Bound Secondary School Student, Utilizing Multidimensional Scaling. (Rutgers University, The State University of New Jersey, 1971.) *Dis. Abst. Int.* 32A: 5594; May 1972.

Bompart, Billy Earl. The Development of an Undergraduate Program for Prsopective Secondary School Mathematics Teachers Based on an Analysis of State Certification Requirements. (The University of Texas, 1967.) *Dis. Abst.* 28A: 4020; April 1968.

Boonstra, Paul Henry. A Pilot Project for the Investigation of the Effects of a Mathematics Laboratory Experience: A Case Study. (Michigan State University, 1970.) *Dis. Abst. Int.* 31A: 2225; Nov. 1970.

Bradberry, Helon Styles. A Study of the Participants in the 1959-60 and 1960-61 Academic Year Institutes Sponsored by the National Science Foundation at Six Southeastern Universities. (University of Georgia, 1967.) *Dis. Abst.* 28A: 2114; Dec. 1967.

Bradley, Banks Thurston. An Assessment of Objectives for Special Methods Courses for the Subject Areas of English, Mathematics, Science, and Social Studies. (Indiana University, 1970.) *Dis. Abst. Int.* 31A: 5897; May 1971.

Bradshaw, Charles Kenneth. Mathematics Teaching in the Public Secondary Schools of the State of Nevada. (University of California, Berkeley, 1968.) *Dis. Abst.* 29A: 1148; Oct. 1968.

Brenton, Beatrice A. An Analysis of the Effectiveness of a Phenomenological Approach in Teaching, as Used in a Teacher Education Modern Mathematics Workshop. (Michigan State University, 1969.) *Dis. Abst. Int.* 30A: 1892; Nov. 1969.

Brown, Donald Eugene. A Comparison of Certification and Degree Requirements with Secondary School Mathematics Curriculum. (Texas A & M University, 1971.) *Dis. Abst. Int.* 32A: 5529; Apr. 1972.

Brumbaugh, Frederick Lee. The Relationships Between Selected Performance Factors and Student Teachers' Course Evaluation of Teaching Mathematics in the Elementary Schools. (Indiana University, 1968.) *Dis. Abst.* 29A: 3487; April 1969.

Brunsvold, Perley Olandus. The Relationship Between Selected School District Variables and Teacher Assignment Based on Preparation. (The University of Iowa, 1966.) *Dis. Abst.* 27A: 341-342; Aug. 1966.

Buck, Crayton LaRue. Mathematics Teaching Behavior of Selected Intermediate Grade Teachers Utilizing the OScAR (EM) for Systematic Observation. (The Pennsylvania State University, 1967.) *Dis. Abst.* 28A: 3525; Mar. 1968.

Buckeye, Donald Andrew. The Effects of a Creative Classroom Environment on the Creative Ability of Prospective Elementary Mathematics Teachers. (Indiana University, 1968.) *Dis. Abst.* 29A: 1801; Dec. 1968.

Byrkit, Donald Raymond. A Comparative Study Concerning the Relative Effectiveness of Televised and Aural Materials in the Inservice Training of Junior High School Mathematics Teachers. (The Florida State University, 1968.) *Dis. Abst.* 29A: 1463; Nov. 1968.

Callahan, Leroy G. A Study of Knowledge Possessed by Elementary School Teachers, In-Service and In-Training, of the Cultural, Psychological, and Mathematical Foundations of the Elementary School Mathematics Program. (Syracuse University, 1966.) *Dis. Abst.* 27A: 4149-4150; June 1967.

Calloway, Elwayne. Required Mathematical Topics for Prospective Junior High School Mathematics Teachers at the University of Arkansas. (University of Arkansas, 1971.) *Dis. Abst. Int.* 32A: 2521; Nov. 1971.

Campbell, William Lester. A Study of the Effectiveness of Supplementing a Mathematics Course for Prospective Elementary Teachers with Materials from Elementary School Mathematics Series. (The University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 6448; June 1971.

Carroll, Edward Major. Competencies in Mathematics of Certain Prospective Elementary School Teachers. Dis. Abst. 25: 5134; Mar. 1965.

Carter, Irvin Lee. In-Service Education and Innovation in Oklahoma Public Schools. (The University of Oklahoma, 1971.) Dis. Abst. Int. 32A: 2333-2334; Nov. 1971.

Carter, Jack Caldwell. Selected Characteristics of Beginning Science and Mathematics Teachers in Georgia. (University of Georgia, 1967.) Dis. Abst. 28A: 4929; June 1968.

Casebeer, Kelvin Dwight. A Comparison of Two Sequences for Introducing Positional Numeration Systems with a Base to Pre-Service Elementary Teachers. (Oklahoma State University, 1967.) Dis. Abst. 28A: 4930; June 1968.

Chandler, Russell Lafayette. A Study of the Effects of an Inservice Workshop Experience on the Beliefs and Understandings of Teachers Toward Performance Objectives. (Auburn University, 1972.) Dis. Abst. Int. 33A: 2633; Dec. 1972.

Chase, Charles Hughes. An Investigation of the Contribution of Selected Curriculum Development Activities to the Teaching of Elementary Mathematics. (Columbia University, 1967.) Dis. Abst. 28A: 2474-2475; Jan. 1968.

Chavier, Rosalind Roper. The Undergraduate Course in Methods of Teaching Secondary School Mathematics. (Columbia University, 1964.) Dis. Abst. 25: 5134-5135; Mar. 1965.

Clark, John Ferguson. A Study of the Relative Effectiveness of Some In-Service Programs in Modern Mathematics on Second and Seventh Grade Teachers in Nine Northeastern California Counties. (University of California, Berkeley, 1967.) Dis. Abst. 28A: 2578-2579; Jan. 1968.

Clarkson, Donald Robert. The Effect of an In-Service Summer Institute on Mathematical Skills, Understandings, and Attitude Toward Mathematics of Elementary School Teachers. (The University of Connecticut, 1968.) Dis. Abst. 29A: 3019; Mar. 1969.

Cleminson, Robert Alan. A Comparison of Attitudes and Achievement Between Elementary Mathematics Method Classes Receiving Instruction Through Two Different Methodologies -- Teacher-Oriented Large Group Instruction and Student-Oriented Small Group Discussion. (The University of Iowa, 1972.) Dis. Abst. Int. 33A: 3450; Jan. 1973.

Coblentz, Dwight Oliver. An Analysis of the Practices Carried Out by Cooperating Teachers in Supervising Student Teachers in Mathematics as Perceived by Student Teachers. (Northwestern University, 1971.) *Dis. Abst. Int.* 32A: 3133-3134; Dec. 1971.

Collier, Charles Patrick. The Formal-Informal Dimensions of Attitude Toward Mathematics and Mathematics Instruction of Prospective Elementary Teachers. (The University of Wisconsin, 1969.) *Dis. Abst. Int.* 31A: 660-661; Aug. 1960.

Connelly, Ralph D. A Taxonomic Approach to the Evaluation of Attitudes of Propsective Elementary Teachers in a Mathematics Education Course. (Kent State University, 1972.) *Dis. Abst. Int.* 34A: 613-614; Aug. 1973.

Cook, Cleland Vern. A Study of the Preservice Education of Secondary Mathematics Teachers. (University of South Dakota, 1969.) *Dis. Abst. Int.* 30A: 3824-3825; Mar. 1970.

Cook, James Marvin. Learning and Retention by Informing Students of Behavioral Objectives and Their Place in the Hierarchical Learning Sequence. (University of Maryland, 1970.) *Dis. Abst. Int.* 31A: 1112; Sept. 1970.

Cooney, Thomas James. An Analysis of Teachers' Verbal Behavior Using the Theory of Relations. (University of Illinois, 1969.) *Dis. Abst. Int.* 31A: 673; Aug. 1970.

Copley, Wlater Patrick. The Construction and Validation of an Instrument to Measure the Attainment of Certain Mathematical Concepts Recommended by the Committee on the Undergraduate Program in Mathematics. (Boston University School of Education, 1971.) *Dis. Abst. Int.* 32A: 1954-1955; Oct. 1971.

Coughlin, Sister Francetta. A Study of the Effectiveness of a Modified Liberal Arts Mathematics Course in the Mathematical Preparation of Prospective Elementary Teachers. (The University of Michigan, 1968.) *Dis. Abst. Int.* 30A: 185; July 1969.

Crittenden, William Bryan. A Study of Attitudes of Elementary and Secondary Teachers of Mathematics Toward Selected Deterrents to Pupil Progress. (University of Houston, 1970.) *Dis. Abst. Int.* 32A: 280; July 1971.

Crothamel, David Allen. High School Mathematics Related to College Freshman Science: A Comparison of Teacher Opinion on Use and Achievement. (The University of Michigan, 1972.) *Dis. Abst. Int.* 33A: 5963; May 1973.

Cruikshank, Douglas Edwin. An Analysis of Selected Textbooks Currently Used for Preservice Professional Courses in Teaching Elementary School Mathematics. (University of Oregon, 1968.) *Dis. Abst.* 29A: 2134; Jan. 1969.

Davis, Thomas F. An Evaluation of a Graduate Program in Mathematics for Experienced Secondary School Teachers Sponsored by the National Science Foundation at the University of Detroit, 1958-1969. (Wayne State University, 1972.) *Dis. Abst. Int.* 33A: 6054; May 1973.

Deatsman, Gary Allen. Efficiency of Time Use by Above Average Pre-Service Elementary School Teachers Learning Mathematics in Independent Study Sessions. (Arizona State University, 1971.) *Dis. Abst. Int.* 32A: 3113; Dec. 1971.

DeLong, Douglas Dean. An Introduction to Computer Programming for Elementary or Junior High School Teachers. (University of Northern Colorado, 1973.) *Dis. Abst. Int.* 34A: 198; July 1973.

DeRenzis, Joseph John. An Investigation Into the Attitude Patterns and Their Relationship to Prescription Writing Procedures of Teachers Using the IPI Instructional System in Elementary Mathematics. (Temple University, 1970.) *Dis. Abst. Int.* 31A: 6398; June 1971.

Dettmers, Ronald Dale. An Experimental Comparison of Three Methods of Teaching Mathematical Logic to Prospective Elementary Teachers. (The University of Michigan, 1969.) *Dis. Abst. Int.* 31A: 661-662; Aug. 1970.

Dickens, Charles Henderson. Effect of In-Service Training in Elementary-School Mathematics on Teachers' Understanding and Teaching of Mathematics. (Duke University, 1966.) *Dis. Abst.* 27A: 1684-1685; Dec. 1966.

Dimeolo, James Richard. An Experimental Study Relating Elementary Classroom Teaching Behavior to Student Achievement. (Case Western Reserve University, 1968.) *Dis. Abst.* 29A: 4219-4220; June 1969.

Dixon, Billy Gene. Mathematical Concepts That a Teacher of the First Two Years of Secondary School Algebra Must Understand in Order to Effectively Use the "New Mathematics" Curriculum Materials. (Southern Illinois University, 1967.) *Dis. Abst.* 28A: 3551-3552; Mar. 1968.

Dockweiler, Clarence J. A Study of the Impact of a CUPM Inspired Mathematics Course on the Level of Mathematical Understanding of Lutheran Elementary School Teachers. (Northwestern University, 1970.) *Dis. Abst. Int.* 31A: 4001; Feb. 1971.

Donnelly, Mona Mary. A Study of Elementary Teachers' Personality Traits and Attitudes Toward Teaching Selected Content Areas in the Elementary School. (University of Illinois at Urbana-Champaign, 1971). *Dis. Abst. Int.* 32A: 5648-5649; Apr. 1972.

Dossett, Mildred Jerline. An Analysis of the Effectiveness of the Workshop as an In-Service Means for Improving Mathematical Understandings of Elementary School Teachers. (Michigan State University, 1964.) Dis. Abst. 26: 209-210; July 1965.

Early, Joseph Everett. A Study of the Grade Level Teaching Preferences of Prospective Elementary Teachers with Respect to Their Attitudes Toward Arithmetic and Achievements in Mathematics. (The University of Tennessee, 1969.) Dis. Abst. Int. 30A: 3345-3346; Feb. 1970.

Eicher, Charles Edward. The Effects of Instruction in Interaction Analysis on the Verbal Teaching Behavior of Elementary Mathematics Methods Students. (Indiana University, 1969.) Dis. Abst. Int. 31A: 262; July 1970.

Eisenberg, Theodore Allen. The Integration of Modified Learner-Generated Sequences Into the Development of a Behaviorally Stated Learning Hierarchy, as Applied in Mathematics Curricula Construction. (University of Maryland, 1970.) Dis. Abst. Int. 31A: 4033-4034; Feb. 1971.

Elliott, Robert Brown. The Relationship Between Training, Experience, and Characteristics of Secondary Teachers of the Educable Mentally Retarded and the Teaching of Arithmetic. (The University of Michigan, 1970.) Dis. Abst. Int. 31A: 6438; June 1971.

Elsner, Priscilla Jo Edwards. A Study of Criterion-Referenced Assessment and Its Classroom Uses as Viewed by Teachers. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 3253-3254; Jan. 1973.

Emery, Harriett Elenor. Mathematics for Prospective Elementary Teachers in a Community College: A Comparison of Audio-Tutorial and Conventional Teaching Materials and Modes. (Michigan State University, 1970.) Dis. Abst. Int. 31A: 5930; May 1971.

Engelhardt, Jon Maurice. The Relationship Between a Dimension of Cognitive Style and the Teaching Behavior of Prospective Elementary Teachers of Mathematics. (The University of Texas at Austin, 1972.) Dis. Abst. Int. 33A: 4934; March 1973.

Erb, Clinton Allen. A Formative Evaluation of an Experimental Teacher Education Project for Juniors in Mathematics Education at The Ohio State University. (The Ohio State University, 1971.) Dis. Abst. Int. 32A: 4464; Feb. 1972.

Erickson, Barney Lee. Effects of a College Mathematics Sequence Upon the Attitudes and Achievement in Mathematics of Prospective Elementary School Teachers. (Utah State University, 1970.) Dis. Abst. Int. 30A: 5337; June 1970.

Estes, Robert Abbott. The Effect of Translation Practice and Group Participation in Solving Verbal Problems for Prospective Elementary Teachers. (The University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 6274-6275; June 1971.

Ferguson, Frank Fred. Competence in Geometry of Prospective Elementary School Teachers at Chadron State College. (University of Northern Colorado, 1972.) *Dis. Abst. Int.* 33B: 5386-5387; May 1973.

Fey, James Taylor. Patterns of Verbal Communication in Mathematics Classes. (Columbia University, 1968.) *Dis. Abst.* 29A: 3040; Mar. 1969.

Fields, Ewaugh Finney. A Study of Changes in the College Preparatory Mathematics Curriculum and Institute Attendance of Mathematics Teachers in Public Secondary Schools of New Jersey During 1964-1967. (Temple University, 1969.) *Dis. Abst. Int.* 31A: 1114-1115; Sept. 1970.

Fisher, Nancy Capozzolo. Mathematical Problem-Solving's Mathelation Component Related to Achievement, Attitude, Critical Thinking in Prospective Elementary Teachers. (Indiana University, 1972.) *Dis. Abst. Int.* 33A: 5965-5966; May 1973.

Fithian, Ephraim B., Jr. The Effects of a Coordinated Mathematics Content and Methods Sequence on Prospective Elementary Teachers. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 5085; Mar. 1972.

Fitzgerald, David Leon. A Study of the Effect of a Mathematics Laboratory Upon the Performance of Prospective Elementary Teachers Enrolled in a Mathematics Class for Elementary Teachers. (University of Houston, 1971.) *Dis. Abst. Int.* 32A: 4465; Feb. 1972.

Fleischmann, Ray Wendell. A Comparison of Two Methods of Instruction in Mathematics for Elementary Teachers. (Oklahoma State University, 1970.) *Dis. Abst. Int.* 31A: 5246; Apr. 1971.

Flora, Ben Vivian, Jr. Development of an Instrument for Assessing Teacher Behavior Characteristics of Teachers of Secondary School Mathematics. (The Ohio State University, 1969.) *Dis. Abst. Int.* 31A: 662-663; Aug. 1970.

Foisy, Hector B. The Mathematics Specialist in the Elementary School. (George Peabody College for Teachers, 1971.) *Dis. Abst. Int.* 32B: 2281-2282; Oct. 1971.

Foley, Jackie Lee. Effectiveness of Instruction for Teachers of Elementary School Mathematics in Large Groups With Small Discussion Groups. (The University of Florida, 1965.) Dis. Abst. 26: 4329; Feb. 1966.

Fors, Elton W. Trends and Factors in the Curriculum Choices of the Mathematics Majors in Selected State Colleges and Universities. (The University of Oklahoma, 1969.) Dis. Abst. Int. 30A: 1895; Nov. 1969.

Foster, Kenneth Roger. The Implementation of the CUPM Recommendations for Elementary School Mathematics Teachers Into the Curricula of Certain NCATE-Approved and Non-NCATE-Approved Institutions in the United States. (The University of Tennessee, 1970.) Dis. Abst. Int. 31A: 4596-4597; Mar. 1971.

Foster, Thomas Robert. An Analysis of Teacher Behavior Under Announced and Unannounced Observation Conditions by the Supervisor. (University of Maryland, 1972.) Dis. Abst. Int. 33A: 1973-1974; Nov. 1972.

Fowler, Mary Anne. The Effectiveness of Methods Courses as Evaluated by Beginning Elementary Classroom Teachers. (Loyola University of Chicago, 1973.) Dis. Abst. Int. 34A: 3203-3204; Dec. 1973.

Friedman, Morton Lawrence. The Development and Use of a System to Analyze Geometry Teachers' Questions. (Columbia University, 1972.) Dis. Abst. Int. 33A: 4215-4216; Feb. 1973.

Gallagher, Robert Patrick. Personality Characteristics of Counseling and Mathematics Institute Trainees, Changes That Occur During Training, and Relationships Between Counselor Characteristics and Counseling Potential. (Rutgers - The State University, 1968.) Dis. Abst. 28A: 4908; June 1968.

Gannon, Gerald Edward. The Development and Appraisal of a Unit on Selected Topics from Topology for Prospective Elementary School Teachers. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 3255; Jan. 1973.

Garnett, Emma Whitlock. A Study of the Relationship Between the Mathematics Knowledge and the Mathematics Preparation of Undergraduate Elementary Education Majors. (George Peabody College for Teachers, 1968.) Dis. Abst. Int. 30A: 1448; Oct. 1969.

Garrison, Florence Marie Siegle. Attitudes of Elementary Education Majors Toward Subject Areas in Methods Courses and Student Openness-Closedness as Measured by the Rokeach Dogmatism Scale. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 3454; Jan. 1973.

Gee, Burton Cleon. Attitudes Toward Mathematics and Basic Mathematical Understanding of Prospective Elementary School Teachers at Brigham Young University. (Oregon State University, 1966.) Dis. Abst. 26: 6528; May 1965.

Gibbons, Philip Edward. A Comparative Analysis of the Impact of Various Methods of Instruction on Achievement and Understanding in Mathematics for Elementary Teachers. (Oklahoma State University, 1967.) Dis. Abst. 28: 4932; June 1968.

Gilbert, Virginia Terlinden. The Relationship of Certain Educational Experiences to the Understanding of Arithmetic by Prospective Elementary Teachers. (Arizona State University, 1966.) Dis. Abst. 27A: 981; Oct. 1966.

Gordis, Felice Witztum. A Piagetian Analysis of the Teaching of Seriation Concepts in Four First Grade Classrooms. (Columbia University, 1970.) Dis. Abst. Int. 33B: 4994-4995; April 1973.

Graening, John Jay. An Evaluation of a Secondary Mathematics Teacher Education Program Emphasizing School Experiences in Contrasting Cultural Settings. (The Ohio State University, 1971.) Dis. Abst. Int. 32A: 3838-3839; Jan. 1972.

Gray, James Harold. A Follow-Up Study of the National Science Foundation Summer Institutes for Secondary Teachers of Science and Mathematics Held at the University of Mississippi, 1957-1969. (The University of Mississippi, 1970.) Dis. Abst. Int. 31A: 4597; Mar. 1971.

Greabell, Leon Charles, Jr. A Comparison of Mathematical Competency Between Prospective Elementary School Teachers Utilizing a Student Goal Determined Approach to Study Mathematics and Prospective and Elementary School Teachers Enrolled in an Instructor Goal Determined Course in Mathematics. (Syracuse University, 1969.) Dis. Abst. Int. 31A: 1661-1662; Oct. 1970.

Green, George F., Jr. The Effectiveness of a Correspondence-Study Method for Teaching Mathematics to In-Service Elementary School Teachers Using Programmed Instruction and Television. (The Florida State University, 1967.) Dis. Abst. 28A: 2580-2581; Jan. 1968.

Greenough, Franklin Hayes. Selective Utilization of Mathematics Textbooks by Elementary School Teachers. (University of Idaho, 1969.) Dis. Abst. Int. 31A: 289-290; July 1970.

Griffin, John Duncan. North Carolina Elementary School Teachers' Understanding of Contemporary Arithmetic. (Duke University, 1966.) Dis. Abst. 27A: 3616; May 1967.

Grimes, Bill Ray. A Modern Geometric Development for Elementary School Mathematics Teachers. (Oklahoma State University, 1969.) Dis. Abst. Int. 31A: 4004; Feb. 1971.

Grimsley, Edith Ellington. A Study of the Role Expectations of Curriculum Generalists and Specialists in Relation to Elementary Mathematics Innovations in One School System as Perceived by Themselves and by Their Principal Role Partners in the Innovations. (Columbia University, 1968.) Dis. Abst. 29A: 4374; June 1969.

Grunwald, George B. The Relative Effectiveness of Different Types of Help-Sessions When Teaching Mathematics to a Large Section of Prospective Elementary Teachers. (George Peabody College for Teachers, 1969.) Dis. Abst. Int. 30A: 4874; May 1970.

Hageltom, Sidahmed Mohamed Osman. An In-Service Course in Support of UNESCO Mathematics Project for the Arab States. (Columbia University, 1972.) Dis. Abst. Int. 33A: 6216; May 1973.

Haggard, Charles Harmon. A Study of the Mathematical Understanding of Pre-Service Elementary School Teachers in Selected Kentucky Teacher Education Institutions. (University of Kentucky, 1971.) Dis. Abst. Int. 32A: 1957-58; Oct. 1971.

Haigh, William E. Preparation of Senior High School Mathematics Teachers in South Dakota. (Indiana University, 1970.) Dis. Abst. Int. 31A: 2772; Dec. 1970.

Hamburg, Russell Norman. A Study of Attitudinal Differences of Parents and Teachers to Selected Subject Content of the Elementary School Curriculum in Grades One Through Six. (University of Oregon, 1971.) Dis. Abst. Int. 32A: 4919; Mar. 1972.

Hammond, Harry Reginald. Developing Teacher Understanding of Arithmetic Concepts Through In-Service Education. (University of California, Los Angeles, 1964.) Dis. Abst. 25: 5138; Mar. 1965.

Hand, Edith Frances. Evaluation of a Large-Scale Mathematics In-Service Institute for Elementary Teachers. (University of Georgia, 1967.) Dis. Abst. 28A: 2118-2119; Dec. 1967.

Happel, Donald Alfred. Factors Associated with the Extent to Which Iowa Secondary Mathematics Teachers Are Up-to-Date in Mathematics and in the Teaching of Mathematics. (The University of Iowa, 1972.) Dis. Abst. Int. 33A: 6767-6768; June 1973.

Haukebo, Gerhard Karroll. An Investigation of the Effect of the Study of Numeration Systems in the Mathematics Preparation of Future Elementary Teachers. (University of Minnesota, 1967.) Dis. Abst. 28A: 2119-2120; Dec. 1967.

Haynes, Robert Clayton. The Role of In-Service Education in Attitudinal Change for Teachers of Slow Learners in Mathematics and Science. (George Peabody College for Teachers, 1969.) *Dis. Abst. Int.* 30A: 4307; Apr. 1970.

Heintz, Ruth Fuller. Goals in the Cognitive and Affective Domains and a System of Instruction for the Pre-Service Training of Teachers of Elementary School Mathematics. (State University of New York at Buffalo, 1971.) *Dis. Abst. Int.* 32A: 819-820; Aug. 1971.

Heisey, Daniel Joseph. A Characterization of Provers and Nonprovers in an Axiomatic Geometry Course for Elementary Education Majors: A Discriminate Analysis. (Purdue University, 1966.) *Dis. Abst.* 27A: 413-414; Aug. 1966.

Hendrickson, Arthur Dean. A Study of the Relative Effectiveness of Three Methods of Teaching Mathematics to Prospective Elementary School Teachers. (University of Minnesota, 1969.) *Dis. Abst. Int.* 31A: 1117; Sept. 1970.

Henry, Loren Lee. Innovation and Membership in the National Council of Teachers of Mathematics in Selected Secondary Schools of Indiana. (Indiana University, 1971.) *Dis. Abst. Int.* 32A: 4242; Feb. 1972.

Hernandez, Norma Eugenia Gonzalez. An Observation System to Analyze Cognitive Content of Teacher Discourse in a Mathematics Lesson. (The University of Texas at Austin, 1970.) *Dis. Abst. Int.* 31A: 1664; Oct. 1970.

Hicks, Randall Clarke. A Program of Study in Mathematics for Elementary School Teachers Based Upon Exhibited and Derived Needs. (University of Georgia, 1966.) *Dis. Abst.* 27A: 3341-3342; Apr. 1967.

Higdon, Danny Wallace. A Comparison of Mathematical Attitudes and Competence of Selected Prospective and Experienced Elementary Teachers in the State of Texas During the 1971-72 Academic Year. (University of Houston, 1972.) *Dis. Abst. Int.* 34A: 202; July 1973.

Hill, John Clarence. The Analysis of Content Development Through Classroom Communication. (The Ohio State University, 1969.) *Dis. Abst. Int.* 30A: 4330; Apr. 1970.

Hilton, Alice Schafer. The Understandings of Mathematics and the Attitudes Toward Mathematics Expressed by Prospective Elementary School Teachers. (State University of New York at Buffalo, 1969.) *Dis. Abst. Int.* 31A: 266; July 1970.

Hodgin, Katharine Wyatt. A Study of Aspects of Curriculum Change in Mathematics as Perceived by Selected Mathematics Teachers in Alabama Secondary Schools. (University of Alabama, 1966.) Dis. Abst. 27A: 2733; Mar. 1967.

Hoeh, James Albert, Jr. The Effectiveness of Department Chairmen in the Improvement of Instruction. (The University of Michigan, 1969.) Dis. Abst. Int. 30A: 3682-3683; Mar. 1970.

Hoffman, Joseph Raymond, Jr. A Heuristic Study of Key Teaching Variables in Junior High School Mathematics Classrooms. (University of Illinois at Urbana-Champaign, 1972.) Dis. Abst. Int. 34A: 665; Aug. 1973.

Hogg, Carmen Claire. A Study to Determine the Extent to Which Student Teachers Can be Conditioned to Work with the Culturally Disadvantaged. (Oklahoma State University, 1967.) Dis. Abst. 28 : 4934; June 1968.

Howe, Parshall Lyndon. A Study of the Effectiveness of the Curricula of the California State Colleges as a Pre-Service Preparation to Teach Algebra I and Geometry. (Oklahoma State University, 1966.) Dis. Abst. 27A: 4154-4155; June 1967.

Howell, Daisy Loden. The Development of an Instructional Guide for a Methods Course in Secondary School Mathematics. (The University of Mississippi, 1969.) Dis. Abst. Int. 30A: 1050; Sept. 1969.

Hummel, Harvey Morton. The Relationships Between Success in Teaching and Certain Personality Factors, Persistence in Teaching, and Educational Attainment of Experienced Secondary Teachers. (University of Minnesota, 1972.) Dis. Abst. Int. 33A: 6176; May 1973.

Hurd, Raymond Wilbur. Use of Finite Mathematical Systems in Teaching Mathematics for Elementary Teachers. (The Ohio State University, 1967.) Dis. Abst. 28 : 4935; June 1968.

Irby, Bobby Newell. A Follow-Up Study of the Participants of the National Science Foundation Academic Year Institutes for High School Teachers of Science and Mathematics Held at the University of Mississippi, 1961-66. (The University of Mississippi, 1967.) Dis. Abst. 28A: 2120; Dec. 1967.

Jackson, Tillman Valentine. The Scope and Nature of Quasi-Supervision in the State of Oklahoma with Focus Upon the Status and Role of Quasi-Supervisors of Secondary Science and Mathematics. (The University of Oklahoma, 1965.) Dis. Abst. 26 : 3720; Jan. 1966.

James, Jerusha Ann Cobb. A Study of the Effects of Problem-Solving Strategies Developed in Teacher In-Service Workshops on Fourth and Fifth Grade Childrens' Achievement. (Wayne State University, 1972.) *Dis. Abst. Int.* 33A: 6649-6650; June 1973.

Jensen, Ove William. The Development and Standardization of a Test of Understandings of the Real Number System. (University of Miami, 1967.) *Dis. Abst.* 28A: 988; Sept. 1967.

Jolley, Paul Wiseman. A Method of Evaluating an Objective of an NSF-AYI: The Effect of the 1969-1970 Florida State University Academic Year Institute Upon Its Participant's Ability to Read Pertinent Mathematical Materials. (The Florida State University, 1971.) *Dis. Abst. Int.* 32A: 6270; May 1972.

Jones, Bobby. A Comparison of Teachers' and Students' Perceptions of Learning Opportunities Provided in Elementary School Classrooms. (University of Georgia, 1973.) *Dis. Abst. Int.* 34A: 3028-3029; Dec. 1973.

Jones, Richard John. Comparative Career Orientations of Beginning Male Mathematics, Science, Social Studies, and English Teachers. (The Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 6042-6043; May 1972.

Jorgensen, Harold Christen. Characteristics of Teachers Submitting Applications for Academic Year Institute Programs at Oregon State University. (Oregon State University, 1966.) *Dis. Abst.* 27A: 2425; Feb. 1967.

Keith, Virgie Irene. Elementary Teachers' Knowledge of the Geometry Appearing in Elementary School Mathematics Textbooks. (University of Virginia, 1970.) *Dis. Abst. Int.* 31A: 5037; Apr. 1971.

Kennedy, Joseph Wilson. The Development of a Test of Skill in Solving Mathematics Teaching Problems. (Indiana University, 1963.) *Dis. Abst.* 24 : 3202-3203; Feb. 1964.

Kidd, Alice Reese. The Development of an Instructional Package for High School Geometry Teachers and a Study of the Effectiveness of Its Use in In-Service Training. (The University of Texas at Austin, 1970.) *Dis. Abst. Int.* 32A: 3561; Jan. 1972.

Kilman, Darrell Clark. The Effect of a Micro-Teaching Technique on the Attitudes of Prospective Elementary Teachers Toward Mathematics. (Oklahoma State University, 1969.) *Dis. Abst. Int.* 31A: 3783; Feb. 1971.

Kindle, E. Glenn. Evaluation of the 1969 Colorado Department of Education In-Service Program for Elementary School Mathematics Teachers. (University of Denver, 1971.) Dis. Abst. Int. 32B: 7172; June 1972.

Kneitz, Margaret H. A Study of Secondary Mathematics Teacher Dropouts in Texas. (University of Houston, 1969.) Dis. Abst. Int. 30A: 2402; Dec. 1969.

Knight, Lewis Emerson. An Investigation of Teacher Preparation for Variable Use of Mathematical Instructional Modes. (Stanford University, 1971.) Dis. Abst. Int. 32A: 4469-4470; Feb. 1972.

Knodel, Raymond Willard. A Comparative Study of Two Approaches to Teaching Mathematics and Arithmetic Methods to Prospective Elementary School Teachers. (University of Northern Colorado, 1970.) Dis. Abst. Int. 31A: 4010-4011; Feb. 1971.

Koeckeritz, William Albert. An Analysis of Mathematical and Professional Knowledge of Present and Future Elementary Teachers. (Utah State University, 1970.) Dis. Abst. Int. 31A: 3172; Jan. 1971.

Konkle, Gail Stuart. Achievement as Affected by Teaching for Generalization in Mathematics. (Arizona State University, 1968.) Dis. Abst. 29A: 2588; Feb. 1969.

Kysilka, Marcella Louise. The Verbal Teaching Behaviors of Mathematics and Social Studies Teachers in Eighth and Eleventh Grades. (The University of Texas at Austin, 1969.) Dis. Abst. Int. 30A: 2725; Jan. 1970.

Lazar, David I. The Development and Validation of an Instrument to Assess the Understanding of Basic Algebraic Concepts by Prospective Teachers of Secondary School Mathematics. (Temple University, 1972.) Dis. Abst. Int. 33A: 1517; Oct. 1972.

Leake, Charles R. Interest Changes in Mathematics of Selected College Students in New York State. (New York University, 1969.) Dis. Abst. Int. 30A: 2853; Jan. 1970.

Leitch, Vernon Dale. A Comparative Study of the Active Learning Approach and the Lecture Discussion Method of Instruction for Prospective Elementary Teachers. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33A: 3464; Jan. 1973.

Leonard, William A. The Development and Appraisal of a Unit on Simple Continued Fractions for Prospective Elementary School Teachers. (University of Northern Colorado, 1972.) Dis. Abst. Int. 33B: 5394-5395; May 1973.

Levine, Maita Faye. A Study of Mathematical Confidence Relative to the Attainment of Certain Objectives of the In-Service Institute in Mathematics for Secondary School Teachers, University of Cincinnati, 1969-1970. (The Ohio State University, 1970.) Dis. Abst. Int. 32A: 287-288; July 1971.

Lindell, Verlyn LeRoy. An Evaluation of an In-Service Program for Elementary School Mathematics Teachers Conducted by the Colorado State Department of Education. (University of Denver, 1966.) Dis. Abst. 27A: 3346; Apr. 1967.

Lindsay, Charles McCown. An Experimental Investigation of Two Methods Used in the In-Service Education of Teachers of Arithmetic. (George Peabody College for Teachers, 1965.) Dis. Abst. 26 : 5219-5220; Mar. 1966.

Lipson, Stanley Harris. The Effects of Teaching Heuristics to Student Teachers in Mathematics. (Columbia University, 1972.) Dis. Abst. Int. 33A: 2221-2222; Nov. 1972.

Little, Richard A. A Taxonomic Approach to Measuring Achievement in Mathematics 223 - Geometry for Elementary Teachers. (Kent State University, 1971.) Dis. Abst. Int. 32A: 6105; May 1972.

Litwiller, Bonnie Helen. Enrichment: A Method of Changing the Attitudes of Prospective Elementary Teachers Toward Mathematics. (Indiana University, 1968.) Dis. Abst. 29A: 1808-1809; Dec. 1968.

Lockwood, James Riley. An Analysis of Teacher-Questioning in Mathematics Classrooms. (University of Illinois at Urbana-Champaign, 1970.) Dis. Abst. Int. 31A: 6472-6473; June 1971.

Lyng, Merwin John. Relation of Knowledge of Contemporary Mathematics to Other Variables for a Sample of Experienced Secondary Teachers. (The Ohio State University, 1967.) Dis. Abst. 28A: 989; Sept. 1967.

Mahaffy, Donald Lee. A Comparison of Two Schemes for Sequencing a Methods Course and Student Teaching. (Oklahoma State University, 1971.) Dis. Abst. Int. 33A: 648-649; August 1972.

Mahan, Elizabeth Anne. A Study of the Verbal Behavior of Four Student Teachers Teaching Selected Geometric Concepts to Kindergarten Children. (Columbia University, 1970.) Dis. Abst. Int. 31A: 3392-3393; Jan. 1971.

Mainville, Waldeck Ernest, Jr. A Study of the Effect of Mathematics Activity Materials Upon Certain Aspects of Creative Thinking Ability of Prospective Elementary School Teachers. (Michigan State University, 1972.) Dis. Abst. Int. 33A: 2222; Nov. 1972.

Mallory, Curtiss Orville. An Experiment Using Programmed Materials to Supplement a Mathematics Content Course for Elementary Education Majors. (Colorado State College, 1969.) *Dis. Abst. Int.* 30B: 1793; Oct. 1969.

Martau, Gerald Edward. The Development of a Model Mathematics Methods Component of an Elementary School Teacher's Preparation. (The University of Toledo, 1972.) *Dis. Abst. Int.* 34A: 651; Aug. 1973.

Martin, Bernard Loyal. Spatial Visualization Abilities of Central Washington State College Prospective Elementary and Secondary Teachers of Mathematics. (Oregon State University, 1966.) *Dis. Abst.* 27A: 2427-2728; Feb. 1967.

Martin, John Frederick, Jr. Evaluation of Elements of Analysis for Preservice Elementary Teachers. (Columbia University, 1972.) *Dis. Abst. Int.* 33A: 1062-1063; Sept. 1972.

Martinen, Gordon David. A Study of the National Science Foundation Summer Institutes in Science and Mathematics Held at the University of Idaho from 1957 Through 1964 and Their Impact on Professional Activities of the Recipients. (University of Idaho, 1967.) *Dis. Abst.* 28A: 2446-2447; Jan. 1968.

Masalski, William Joseph. The Design and Feasibility Study of the Mathematics Component of the Model Elementary Teacher Education Program. (University of Massachusetts, 1970.) *Dis. Abst. Int.* 31A: 2233; Nov. 1970.

Massie, Ronald Owen. The Construction and Use of a Test to Evaluate Teacher Preparation in Modern Mathematics. (The University of Nebraska Teachers College, 1967.) *Dis. Abst.* 28A: 4027-4028; Apr. 1968.

McBride, Ralph Book. Flexible Grouping and Differentiated Instruction Based on Achievement of Behavioral Objectives in a Mathematics Course for Prospective Elementary Teachers. (The University of Michigan, 1970.) *Dis. Abst. Int.* 31A: 4040-4041; Feb. 1971.

McCoy, Ronald Eugene. A Study of the Effects of Three Different Strategies of Proof Instruction and Background Factors of Elementary Education Majors for Success in Constructing Deductive Proof in Mathematics. (The Pennsylvania State University, 1971.) *Dis. Abst. Int.* 32A: 5091-5092; Mar. 1972.

McDermott, Cecil Wade. Industrial Applications of Mathematical Models and Abstract Mathematical Systems for Use in Selected Graduate Mathematics Education Courses. (Auburn University, 1967.) *Dis. Abst.* 28A: 1331; Oct. 1967.

McHenry, Hugh Lansden. An Analysis of the Relative Effectiveness of Two Embodiments of Rigor in a First Course in College Mathematics for Prospective Elementary School Teachers. (George Peabody College for Teachers, 1970.) Dis. Abst. Int. 31A: 4014; Feb. 1971.

McKeen, Ronald Louis. A Model for Curriculum Construction Through Observations of Students Solving Problems in Small Instructional Groups. (University of Maryland, 1970.) Dis. Abst. Int. 31A: 5223-5224; Apr. 1971.

McKnight, Regis Quay. Predictive Value of Selected Criteria for Success in Student Teaching. (The Pennsylvania State University, 1971.) Dis. Abst. Int. 32A: 5092-5093; Mar. 1972.

McLaughlin, Jane Ann. The Relationship of Open-Ended vs. Closed-Ended Mathematics Laboratory Activities to the Divergent Thinking Ability of Pre-Service Elementary Teachers. (Columbia University, 1973.) Dis. Abst. Int. 34A: 651-652; Aug. 1973.

McLeod, Douglas B. The Effectiveness of an Inservice Program for Implementing an Activity Approach to Learning Mathematics in the Elementary School. (The University of Wisconsin, 1972.) Dis. Abst. Int. 33A: 4222; Feb. 1973.

McLeod, Jeanne Annette. In-Service Training of Elementary School Teachers in Contemporary Concepts of Arithmetic. (University of Southern California, 1965.) Dis. Abst. 26 : 2069-2070; Oct. 1965.

McNerney, Charles Robert. Effects of Relevancy of Content on Attitudes Toward, and Achievement in, Mathematics by Prospective Elementary School Teachers. (The Ohio State University, 1969.) Dis. Abst. Int. 30A: 2885; Jan. 1970.

Meckes, Richard C. A Study to Ascertain the Instructional Index and Questioning Strategy of Mathematics Teachers in Grade 6, and to Determine Their Relationship to Professional Characteristics and Situational Factors. (Southern Illinois University, 1971.) Dis. Abst. Int. 32A: 4245-4246; Feb. 1972.

Merrick, John Paul. An Analysis of Nine Performance Based Model Elementary Teacher Education Programs. (Washington State University, 1972.) Dis. Abst. Int. 32A: 6840; June 1972.

Miller, Edward Jeremiah, III. The Current Status of High School Mathematics Programs in North Central Texas as Related to Selected Factors. (North Texas State University, 1970.) Dis. Abst. Int. 31A: 3177; Jan. 1971.

Montemuro, Michael Paul. A Comparative Analysis of Three Modes of Instruction Programmed Text - Audio-Projected Program and Lecture-Demonstration. (Temple University, 1968.) Dis. Abst. Int. 31A: 6312-6313; June 1971.

Moore, Teddy R. A Comparison of Secondary Mathematics Teachers--Participants and Non-Participants--In National Science Foundation Mathematics Institutes. (Utah State University, 1971.) Dis. Abst. Int. 32A: 3843; Jan. 1972.

Moorhouse, John Nelson. Student-Appointed Goals Applied to the Evaluation of Student Teacher Mathematics Instruction. (The Pennsylvania State University, 1970.) Dis. Abst. Int. 32A: 823-824; Aug. 1971.

Morford, Myron Lee. A Taxonomic Approach to the Prediction of Achievement in Mathematics Education for Prospective Elementary Teachers. (Kent State University, 1969.) Dis. Abst. Int. 30A: 4314-4315; Apr. 1970.

Moser, James Michael. A Case Study of the Effect of Information Feedback on the Performance of Student Teachers in Mathematics. (University of Colorado, 1965.) Dis. Abst. 26: 5895; Apr. 1966.

Murphy, John Thomas. Beliefs and Practices: A Study of Modernness in Mathematics Teaching in Selected Michigan Public Elementary School Classrooms. (Michigan State University, 1972.) Dis. Abst. Int. 33A: 2241-2242; Nov. 1972.

Naramore, Vincent H. Cognitive Continuity: A Study of the Secondary School Teachers' Knowledge of the Field Properties of Mathematical Systems. (Syracuse University, 1968.) Dis. Abst. Int. 30A: 191-192; July 1969.

Nelson, Paul Alden. Attitudes Held by Elementary Education Teachers Toward the Developmental Potential of the Content Areas. (University of Illinois, 1968.) Dis. Abst. Int. 30A: 192; July 1969.

Nelson, Rebecca Sue Russell. Objectives for Mathematics Methods Courses for Undergraduate Elementary Education Majors Throughout the United States. (Indiana University, 1972.) Dis. Abst. Int. 33A: 6221-6222; May 1973.

Newman, Claire M. The Qualifications and Role of the Mathematics Specialist in the Elementary School. (Columbia University, 1965.) Dis. Abst. 26: 4342; Feb. 1966.

Northey, James Howard. The Lecture and Discussion Use of Class Time in a Pre-Service Mathematics Class for Elementary Teachers. (University of Michigan, 1967.) *Dis. Abst.* 28A: 2125-2126; Dec. 1967.

Nowak, Arlene Theresa. The Use of Time-Lapse Photography to Record Teacher-Pupil Contacts, Teacher Supervisory Behavior, and Teacher Travel in the Classroom. (Wayne State University, 1970.) *Dis. Abst. Int.* 32A: 310; July 1971.

Nugent, Paul Thomas. A Study of Selected Elementary Teachers' Attitudes Toward the New Mathematics. (University of Kentucky, 1967.) *Dis. Abst. Int.* 30A: 2265; Dec. 1969.

Nunley, Bobby Gene. A Study of the Effectiveness of Tele-Lecture in the Retraining of Elementary Teachers in Mathematics. (The University of Texas, 1965.) *Dis. Abst.* 26: 3165; Dec. 1965.

Oliveira, Arnulfo Luis. A Comparison of the Verbal Teaching Behaviors of Junior High School Mexican American and Anglo American Teachers of Social Studies and Mathematics with Classes of Predominantly Spanish-Speaking Children. (The University of Texas at Austin, 1970.) *Dis. Abst. Int.* 31A: 3396; Jan. 1971.

O'Neil, David Robert. A Study of Sixth Grade Teachers' Perceptions Regarding Selected Mathematical Concepts. (The University of Iowa, 1971.) *Dis. Abst. Int.* 32A: 4845-4846; Mar. 1972.

Otillar, Doris M. The Effects of Systematic Consultation on Teacher Behavior and Student Achievement in Rural Deprived Elementary Schools. (The University of Wisconsin, 1973.) *Dis. Abst. Int.* 34A: 3067; Dec. 1973.

Ouellette, Hugh Francis. Effects of Enrichment Problems on Attitude, Problem Solving Ability and Pattern Recognition Ability of Prospective Elementary School Teachers. (University of Northern Colorado, 1972.) *Dis. Abst. Int.* 33A: 6222; May 1973.

Payne, Nell Moorhead. Perceptions of the Actual and Ideal Role of Mathematics Department Chairmen in Selected Georgia Schools. (University of Georgia, 1971.) *Dis. Abst. Int.* 32A: 4926-4927; Mar. 1972.

Perkins, Ruth Marion. Ways of Providing for Individual Differences in Elementary Mathematics. (The University of Michigan, 1967.) *Dis. Abst.* 28: 4937; June 1968.

Pethtel, Richard Dean. A Comparative Analysis of the Effect of Television Instruction on Achievement in a College Mathematics Course for Elementary Teaching Majors. (Indiana University, 1967.) *Dis. Abst*. 28A: 2142; Dec. 1967.

Pitkin, Tony Ray. A Comparison of the Attitudes Toward Mathematics and Toward Pupils of Selected Groups of Elementary School Teachers Who Had Different Types and Amounts of College Education in Modern Mathematics. (University of South Dakota, 1968.) *Dis. Abst*. 29A: 3025-3026; Mar. 1969.

Podbelsek, Allan Roy. A Study of Various Deductive Models for Developing and Teaching Plane Trigonometry Including an Investigation of the General Nature of Trigonometry. (University of Illinois at Urbana-Champaign, 1972.) *Dis. Abst. Int*. 33B: 4916; April 1973.

Pond, Thomas Francis, Jr. Individualized Instruction: A Model for Teacher Preparation. (The University of North Dakota, 1973.) *Dis. Abst. Int*. 34A: 3220; Dec. 1973.

Postman, Robert Derek. The Effects of Mathematics Laboratory Experiences on the Teaching Behavior of Preservice Elementary School Teachers. (Columbia University, 1971.) *Dis. Abst. Int*. 32A: 3142; Dec. 1971.

Prather, Frank Peck. An Experimental Briefing-Teacher Aide Program with Professional Laboratory Experiences for Sophomore-Junior Level Pre-Service Mathematics Teacher Trainees. (The University of Nebraska, 1971.) *Dis. Abst. Int*. 32A: 825; Aug. 1971.

Prock, Don. Algebra for Elementary Teachers Based on Current Elementary Mathematics Textbooks. (Oklahoma State University, 1969.) *Dis. Abst. Int*. 31A: 4019; Feb. 1971.

Pruitt, Robert. The Mathematics Preparation of Select Secondary School Teachers of Mathematics in Ohio Public Schools, 1961-1962. (The Ohio State University, 1963.) *Dis. Abst*. 24: 4574; May 1964.

Purcell, William James. Some Factors Affecting Attitudes of Prospective Teachers Toward Elementary Mathematics. (Columbia University, 1964.) *Dis. Abst*. 25: 5144; Mar. 1965.

Raines, Bob Gene. Personal, Situational and Behavioral Predisposition Factors Related to the Elementary Teacher's Attitude Toward Teaching Mathematics. (University of Virginia, 1970.) *Dis. Abst. Int*. 31A: 4631; Mar. 1971.

Ray, Marilyn Miller. The Preparation of Teachers of Elementary School Mathematics in Louisiana. (University of Oklahoma, 1967.) Dis. Abst. 28A: 2127; Dec. 1967.

Recker, Frank William. Status and Trends in Mathematics in Ohio Secondary Schools. (Western Reserve University, 1965.) Dis. Abst. 27A: 333-334; Aug. 1966.

Reed, Jerry Franklin. The Relative Effectiveness of Programmed and Conventional Textbooks as Supplements to Classroom Lecture in the Teaching of Elementary Modern Mathematics. (Mississippi State University, 1971.) Dis. Abst. Int. 32A: 1989; Oct. 1971.

Regula, Walter Edwin. Preparation of the Mathematics Teachers in the Public Secondary Schools of West Virginia. (The Ohio State University, 1965.) Dis. Abst. 26: 1432-1433; Sept. 1965.

Reid, Isaiah. Diffusion of Innovations in Elementary Schools: A Study of the Primary Sources of Information Used by Teachers. (Cornell University, 1969.) Dis. Abst. Int. 30A: 3697-3698; Mar. 1970.

Rettig, William Leo, Sr. Views of Mathematics Held by a Selected Group of Secondary Mathematics Teachers in Pennsylvania. (The Ohio State University, 1971.) Dis. Abst. Int. 32A: 3571; Jan. 1972.

Reys, Robert Edward. A Study of the Mathematics Preparatory Program for Elementary School Teachers of the University of Missouri at Columbia. (University of Missouri, Columbia, 1966.) Dis. Abst. 27A: 2926-2927; Mar. 1967.

Rice, Jimmy Marshall. A Study of Attitudes of Elementary Teachers Toward Modern Mathematics Programs. (Oklahoma State University, 1964.) Dis. Abst. 26: 1433; Sept. 1965.

Richard, Tommy Harold. The Development and Appraisal of a Unit on Diophantine Equations for Prospective Elementary School Teachers. (University of Northern Colorado, 1971.) Dis. Abst. Int. 32A: 1966; Oct. 1971.

Roberts, Fannie M. Relationships in Respect to Attitudes Toward Mathematics, Degree of Authoritarianism, Vocational Interests, Sex Differences, and Scholastic Achievement of College Juniors. (New York University, 1970.) Dis. Abst. Int. 31A: 2134; Nov. 1970.

Robitaille, David Ford. Selected Behaviors and Attributes of Effective Mathematics Teachers. (The Ohio State University, 1969.) Dis. Abst. Int. 30A: 1472-1473; Oct. 1969.

Robold, Alice Ilene. A Study of the Background of College Instructors of Mathematics for Prospective Elementary-School Teachers. (Ball State Teachers College, 1965.) *Dis. Abst.* 26: 3166; Dec. 1965.

Rollins, Tony James. The Use of Applications in Teaching Secondary School Mathematics with Emphasis on the Situation-Model-Theory Approach. (University of Kansas, 1973.) *Dis. Abst. Int.* 34A: 3181-3182; Dec. 1973.

Roye, James Paul. Modifications of Professional Characteristics of Teacher Participants in National Science Foundation Sponsored Academic Year Institutes. (Arizona State University, 1968.) *Dis. Abst.* 29A: 503; Aug. 1968.

Rudisill, Edwin Murray, Jr. An Investigation of the Relationships Between Mathematics Teachers' Personality Characteristics, as Measured by the Myers-Briggs Type Indicator, and Their Preferences for Certain Teaching Strategies. (The University of Florida, 1972.) *Dis. Abst. Int.* 34A: 176; July 1973.

Runion, Garth Eugene. The Development of Selected Initiating Activities in the Teaching of Mathematics. (University of Illinois at Urbana-Champaign, 1972.) *Dis. Abst. Int.* 34A: 653; Aug. 1973.

Russell, A. Eugene. Developing and Validating Learning Hierarchies in Non-Metric Geometry in Preservice Elementary School Mathematics Methods Courses. (Southern Illinois University, 1972.) *Dis. Abst. Int.* 33A: 4808-4809; March 1973.

Sachdev. Sohindar Singh. Evaluation of the Impact of Summer Institutes for Higher Secondary Mathematics Teachers of Delhi, India, on the School Mathematics Curriculum of Delhi. (Utah State University, 1971.) *Dis. Abst. Int.* 32A: 6015-6016; May 1972.

Schaefer, Sister Mary Geralda. A Critical Analysis of the Mathematics Programs in Selected Catholic Secondary Schools in the United States. (The University of Texas, 1967.) *Dis. Abst.* 27A: 4174; June 1967.

Schmalz, Rosemary. The Effects of Two Types of Feedback in Microteaching on the Development of Mathematics Teachers' Questioning Skills. (The Florida State University, 1972.) *Dis. Abst. Int.* 33A: 2807-2808; Dec. 1972.

Schmelter, Raymond Charles. A Study of Attitude Change of Elementary Teachers in an In-Service Mathematics Education Program. (The University of Wisconsin, 1969.) *Dis. Abst. Int.* 31A: 667-668; Aug. 1970.

Schneck, George Robert. An Investigation of Visitation Experiences in an Education Program for Prospective Elementary Teachers. (Michigan State University, 1972.) *Dis. Abst. Int.* 33A: 654; August 1972.

Schultz, James Edward. Approaches to Teaching Mathematics Content to Prospective Elementary Teachers. (The Ohio State University, 1971.) *Dis. Abst. Int.* 32A: 3848; Jan. 1972.

Seeburger, George Harold. A Comparison of Baccalaureate Science and Mathematics Education Graduates (1953-1963) Active and Inactive in Mathematics and Science Education in 1964. (University of Georgia, 1964.) *Dis. Abst.* 25: 5771; Apr. 1965.

Semilla, Lilia V. Moves and Strategies in a Principle Venture in Secondary School Mathematics. (University of Illinois at Urbana-Champaign, 1971.) *Dis. Abst. Int.* 32A: 4495-4496; Feb. 1972.

Shafer, Dale Marks. The Development and Testing of Subject Matter for a Course in Methods of Teaching Secondary School Mathematics. (The University of Oklahoma, 1967.) *Dis. Abst.* 28A: 1722-1723; Nov. 1967.

Shakrani, Mosen Sharif. A Formative Evaluation of the Mathematics Component of an Experimental Elementary Teacher Education Program at Michigan State University. (Michigan State University, 1973.) *Dis. Abst. Int.* 34A: 3223; Dec. 1973.

Shatkin, Stephen David. A Study of the Change of Attitudes Toward Mathematics of Prospective Elementary School Teachers. (The Ohio State University, 1968.) *Dis. Abst.* 29A: 2904; Mar. 1969.

Shawer, Maher Youssef. A Statistical Analysis of the Growth of Understanding Mathematical Concepts by the Prospective Elementary Teacher. (The University of Oklahoma, 1968.) *Dis. Abst.* 29B: 2994; Feb. 1969.

Sheofee, Jim Bartley. A Comparative Study of the Effectiveness of Two Methods of Teaching Mathematics to Prospective Elementary School Teachers. (The University of Mississippi, 1970.) *Dis. Abst. Int.* 31A: 4606-4607; Mar. 1971.

Shirk, George Bernard. An Examination of Conceptual Frameworks of Beginning Mathematics Teachers. (University of Illinois at Urbana-Champaign, 1973.) *Dis. Abst. Int.* 34A: 653-654; Aug. 1973.

Short, Byrl G. A Study of Secondary School Teachers' Knowledge of and Attitudes Toward Educational Research. (The Pennsylvania State University, 1971.) *Dis. Abst. Int.* 33A: 87; July 1972.

Shouk, Mahmoud Ahmed Ali. A Program for Pre-Service Education of Mathematics Teachers for the Secondary Schools of the U.A.R. (Columbia University, 1965.) *Dis. Abst.* 27A: 132; July 1966.

Skipper, Slade Welma. A Study of the Use of Manipulative Materials as Multiple Embodiments for the Study of Numeration Systems by Prospective Elementary Teachers. (University of Missouri-Columbia, 1972.) *Dis. Abst. Int.* 34A: 1168-1169; Sept. 1973.

Smith, Charles William. The Effect of Group Appointed Goals on Mathematics Teaching Behaviors of Elementary Student Teachers. (The Pennsylvania State University, 1970.) *Dis. Abst. Int.* 32A: 827-828; Aug. 1971.

Smith, Earl Pearson. An Investigation Into the Relationship Between Selected Personal and Professional Characteristics of Teachers and Their Preferences for Behavioral Objectives. (Syracuse University, 1970.) *Dis. Abst. Int.* 31A: 2798; Dec. 1970.

Smith, Edwin Malcolm Ramsey. The Preparation of Elementary School Teachers in Indiana for the Emerging School Mathematics Curriculum. (Ball State University, 1971.) *Dis. Abst. Int.* 32A: 1388-1389; Sept. 1971.

Smith, Gerald Asa. Contents of Mathematics Curriculum for Seventh Grade: Practices and Recommended Program in Los Angeles. (University of Southern California, 1972.) *Dis. Abst. Int.* 33A: 560; August 1972.

Smith, Gerald Eugene. The Relationship of Cognitive Style and Instructional Treatment in the Acquisition of Strategies for Teaching Elementary Mathematics. (The University of Texas at Austin, 1972.) *Dis. Abst. Int.* 33A: 3470: Jan. 1973.

Smith, James Lester. Foundations in Geometry for High School Teachers. (Oklahoma State University, 1963.) *Dis. Abst.* 25 : 949: Aug. 1964.

Smith, Sandra Noel. The Effectiveness of Supervisory Techniques Used with Beginning Mathematics Teachers in the Public Secondary Schools. (The Catholic University of America, 1967.) *Dis. Abst.* 28A: 3444: Mar. 1968.

Smith, Shelby Dean. A Survey of Mathematics Teachers in Illinois, 1963-64. (University of Illinois, 1966.) *Dis. Abst.* 27A: 2091: Jan. 1967.

Sobelman, Marilyn. The Relationship of Secondary School Teachers' Subject Specialization, Teaching Level, and Reaction to Selected Teaching Situations. (New York University, 1971.) *Dis. Abst. Int.* 32A: 1389; Sept. 1971.

Stallings, Charles David. Multiple Discriminant Analysis of Teacher Behavior and Pupil Perceptions of Contrasting Groups of Beginning Teachers. (University of Georgia, 1968.) *Dis. Abst.* 29A: 2594; Feb. 1969.

Steinen, Ramon Frederick. An Exploratory Study of the Results of Providing Increased Feedback to Student Teachers of Mathematics. (The Ohio State University, 1966.) *Dis. Abst.* 27A: 2929; Mar. 1967.

Stephens, Harold William. An Undergraduate Mathematics Program For Prospective Teachers of Secondary School Mathematics. (Columbia University, 1964.) *Dis. Abst.* 26 : 215-216; July 1965.

Stiles, Frederick Arthur. An Analysis of Two Approaches to the Teaching of Mathematics Courses for Prospective Teachers. (The University of Texas at Austin, 1971.) *Dis. Abst. Int.* 32A: 6113; May 1972.

Stilwell, Kenneth James. Attitude Affectation from Video Recording in Secondary Mathematics Methods Class. (University of Northern Colorado, 1971.) *Dis. Abst. Int.* 32A: 3850; Jan. 1972.

Stilwell, Merle Eugene. The Development and Analysis of a Category System for Systematic Observation of Teacher-Pupil Interaction During Geometry Problem-Solving Activity. (Cornell University, 1967.) *Dis. Abst.* 28A: 3083; Feb. 1968.

Stochl, James Everett. A Comparison of Demonstration Teaching by Kinescope and by Classroom Visitation in an Elementary Mathematics Methods Course. (University of Minnesota, 1963.) *Dis. Abst.* 25 : 2369-2370; Oct. 1964.

Story, Garth Elias, Jr. An Analysis of Relationships Between Personality Types of Mathematics Teachers (7-12), as Measured by the Myers-Briggs Type Indicator, and Selected Factors Related to Teaching. (The University of Florida, 1972.) *Dis. Abst. Int.* 33A: 3471; Jan. 1973.

Stowitschek, Joseph James. Validation of Minicourse 5 for Special Education. (Utah State University, 1973.) *Dis. Abst. Int.* 33A: 4990-4991; March 1973.

Strain, Lucille Brewton. Prospective Elementary-School Teachers' Knowledge of Selected Subject Matter. (The Ohio State University, 1965.) *Dis. Abst.* 26 : 1502-1503; Sept. 1965.

Strand, Richard Henry. Attitudes of Teachers and College Professors Toward Goals and the Elementary Mathematics Program in California. (University of Southern California, 1973.) *Dis. Abst. Int.* 33A: 4813; March 1973.

Strickmeier, Henry Bernard, Jr. An Analysis of Verbal Teaching Behaviors in Seventh Grade Mathematics Classes Grouped by Ability. (The University of Texas at Austin, 1970.) *Dis. Abst. Int.* 31A: 3428; Jan. 1971.

Swadener, Marc. National Science Foundation Summer Institute in Mathematics at Indiana University, 1957 Through 1969. (Indiana University, 1970.) *Dis. Abst. Int.* 31A: 2779; Dec. 1970.

Sweetser, Evan Alton. A Descriptive Case Study of an Elementary Teacher Education Program of Science, Mathematics, and Reading for Experiences Teachers. (Michigan State University, 1969.) *Dis. Abst. Int.* 30A: 2409; Dec. 1969.

Taylor, Washington Theophilus. A Cross Sectional Study of the Modification of Attitudes of Selected Prospective Elementary School Teachers Toward Mathematics. (Oklahoma State University, 1969.) *Dis. Abst. Int.* 31A: 4024; Feb. 1971.

Temple, Austin Limiel, Jr. The Effectiveness of Semantic Differential Forms in Measuring Attitudes of Prospective Elementary School Teachers. (George Peabody College for Teachers, 1971.) *Dis. Abst. Int.* 32B: 4091-4092: Jan. 1972.

Thoyre, Henry Howrad. A Pilot Study on the Use of Small-Group Discussion in a Mathematics Course for Preservice Elementary School Teachers. (The University of Wisconsin, 1970.) *Dis. Abst. Int.* 31A: 5258-5259; Apr. 1971.

Todd, Howell Wayne. Moves and Strategies in a Skill Venture in Secondary School Mathematics. (University of Illinois at Urbana-Champaign, 1972.) *Dis. Abst. Int.* 34A: 654-655: Aug. 1973.

Todd, Robert Marion. A Course in Mathematics for In-Service Teachers: Its Effect on Teachers' Understandings and Attitudes. (University of Virginia, 1965.) *Dis. Abst.* 26 : 5898-5899: Apr. 1966.

Trine, Franklin Dawson. A Study to Determine the Differences in the Ability of Candidates for Elementary Teacher Certificates to Recognize Three Key Properties of Simple Mathematical Systems. (The University of Wisconsin, 1965.) *Dis. Abst.* 26 : 5275: Mar. 1966.

Turek, Stephen. Application of the Multiembodiment Principle in a Mathematics Methods Course for Preservice Elementary School Teachers. (University of Missouri-Columbia, 1972.) *Dis. Abst. Int.* 33A: 5022-5023; March 1973.

Vanaman, Sherman Benton. Toward a Theory of Teaching with Special Reference to the Acquisition of Behaviors of a Mathematical Nature. (University of Maryland, 1967.) *Dis. Abst.* 28A: 3577; Mar. 1968.

Van Woert, Robert Allan. The Qualifications and Assignments of Teachers of English, Mathematics and Science in the High Schools of Idaho, 1966-67. (University of Idaho, 1969.) *Dis. Abst. Int.* 31A: 670; Aug. 1970.

Vinskey, Mildred Louise. A Follow-up Study on the Implementation of the Recommendations of the Committee on the Undergraduate Program in Mathematics and Other Mathematics Study Groups Within Selected Massachusetts Elementary School Classrooms. (University of Massachusetts, 1970.) *Dis. Abst. Int.* 31A: 5259; Apr. 1971.

Von Kuster, Lee Norman. A Study of Opinions About the Preparation Programs for Secondary School Mathematics Teachers. (University of Montana, 1971.) *Dis. Abst. Int.* 32A: 3852-3853; Jan. 1972.

Wade, Harmon V. A Case Study of the Role of a Superintendent of Schools in District-Wide Curriculum Development in Modern Mathematics and Science Education and an Evaluation of Resulting Educational Outcomes. (New York University, 1968.) *Dis. Abst. Int.* 30A: 119-120; July 1969.

Wall, Curtiss Edwin. A Study of the Efficacy of a Graduate Mathematics Methods Course in Changing In-Service Elementary Teachers' Attitudes Towards School Mathematics. (Michigan State University, 1972.) *Dis. Abst. Int.* 33A: 6210; May 1973.

Wardrop, Robert Frear. The Effect of Geometric Enrichment Exercises on the Attitudes Toward Mathematics of Prospective Elementary Teachers. (Indiana University, 1970.) *Dis. Abst. Int.* 31A: 670; Aug. 1970.

Warnke, Erlo Henry. The Effect of Practice in the Fundamental Arithmetic Operations on Teacher-Education Students. (Colorado State College, 1968.) *Dis. Abst.* 29A: 2596; Feb. 1969.

Watson, Larry Wayne. The Relationship of the Mathematical Course Work of Teachers and the SAT-M Scores of Their Students. (Duke University, 1969.) *Dis. Abst. Int.* 30A: 2892-2893; Jan. 1970.

Weddle, Edith George. An Appraisal of Selected Aspects of the Teacher Education Program at East Texas State University Based on a Follow-Up Study of Beginning Elementary Teachers. (East Texas State University, 1971.) *Dis. Abst. Int.* 32A: 5097; Mar. 1972.

Weisman, Gale Leon. Mathematics Activity Learning Material for Prospective Elementary Teachers and a Comparative Study of Its Application. (The University of Toledo, 1972.) *Dis. Abst. Int.* 33A: 4255-4256; Feb. 1973.

West, Joseph Floyd. A Study of Inservice Education for Secondary Teachers of Mathematics in Alabama. (University of Alabama, 1971.) *Dis. Abst. Int.* 32A: 4854; Mar. 1972.

Wetter, Donald Merlin. An Analysis of the Preparation of Secondary School Teachers of Mathematics with Special Reference to the New Mathematics Programs. (The University of Nebraska Teachers College, 1966.) *Dis. Abst.* 27A: 1289; Nov. 1966.

Whipkey, Kenneth Lee. A Study of the Interrelationship Between Mathematical Attitude and Mathematical Achievement. (Case Western Reserve University, 1969.) *Dis. Abst. Int.* 30A: 3808; Mar. 1970.

White, Marjorie Jo Ann. A Study of the Change of Achievement and Attitude Toward Arithmetic by Prospective Elementary School Teachers Under the Conditions of Television. (Wayne State University, 1963.) *Dis. Abst.* 25: 2302-2303; Oct. 1964.

Wickes, Harry Edgar. Pre-Service Mathematics Preparation of Elementary Teachers: The Relative Effectiveness of Two Programs in Determining Attitudes Toward, and Achievement in, Mathematics. (Colorado State College, 1967.) *Dis. Abst.* 28A: 2591; Jan. 1968.

Wiesen, Richard A. An Investigation of Several Factors Affecting the Learning of Group Properties by Prospective Elementary Teachers. (State University of New York at Buffalo, 1970.) *Dis. Abst. Int.* 31A: 2239; Nov. 1970.

Williams, Ralph Curtis. Teacher Preparation in Mathematical Arithmetic. (University of Southern California, 1966.) *Dis. Abst.* 27A: 133-134; July 1966.

Williams, Willie Elbert. A Study of a Process to Modify Verbal Interaction Patterns of High School Geometry Teachers. (Michigan State University, 1972.) *Dis. Abst. Int.* 33A: 6228-6229; May 1973.

Wilmoth, Junaita Mae Weeks. Study of Use of Elementary School Mathematics Education Film Seties in Teacher Education Under Two Experimental Conditions. (University of Missouri, Columbia, 1968.) Dis. Abst. 29A: 2597; Feb. 1969.

Wilson, Howard LeRoy. A Follow-Up on the Participants of the Mathematics Academic Year Institutes Held at the University of Illinois. (University of Illinois, 1966.) Dis. Abst. 27A: 2092-2093; Jan. 1967.

Wilson, John Martin, Jr. Post Mathematical Attitudes Among Prospective Elementary Teachers as Predicted by General Mathematics Skills, Modern Mathematics Skills, Modern Mathematics Achievement, and Prior Mathematical Attitudes. (Northern Illinois University, 1973.) Dis. Abst. Int. 34A: 2453; Nov. 1973.

Withnell, Melvin Cleo. A Comparison of the Mathematical Understandings of Prospective Elementary Teachers in Colleges Having Different Mathematics Requirements. (The University of Michigan, 1967.) Dis. Abst. 28: 4941; June 1968.

Wolfe, Marshall. Attitudinal Factors Relating to the Acceptance of Educational Accountability. (Western Michigan University, 1973.) Dis. Abst. Int. 34A: 655; Aug. 1973.

Wolfe, Richard Edgar. Strategies of Justification Used in the Classroom by Teachers of Secondary School Mathematics. (University of Illinois, 1969.) Dis. Abst. Int. 30A: 1064-1065; Sept. 1969.

Wolff, Harry Ludwig. A Study of the Use of Filmed Versus Live Classroom Observations in Arithmetic Content-Methods Classes at Wisconsin State University-Oshkosh. (University of Kansas, 1969.) Dis. Abst. Int. 30A: 5331; June 1970.

Womack, Elton Lamar. The Educational and Employment Status of Mathematics Teachers Who Graduated from Louisiana Teacher Education Institutions 1965-1969. (The Louisiana State University and Agricultural and Mechanical College, 1972.) Dis. Abst. Int. 33A: 2229-2230; Nov. 1972.

Wong, Ruth Eiko Murashige. Status and Direction of Geometry for Teachers. (The University of Michigan, 1968.) Dis. Abst. 29A: 2597-2598; Feb. 1969.

Wood, Nolan Earl, Jr. The Effect of an In-Service Training Program in Verbal Interaction Analysis on Teacher Behavior in the Classroom. (University of Houston, 1968.) Dis. Abst. 29A: 3788-3789; May 1969.

Woods, Francis Pollard. A Study of Mathematics Education in the Public Secondary Schools of Louisiana. (The Louisiana State University and Agricultural and Mechanical College, 1972.) Dis. Abst. Int. 33A: 6604-6605; June 1973.

Woods, Margaret Christine. A Study of Expectations Held by Supervisors Relative to Teacher Aspirations Toward the Objectives in the Cognitive and Affective Domains in Selected Subject Areas. (The University of Wisconsin, 1970.) Dis. Abst. Int. 31A: 5261-5262; Apr. 1971.

Yates, Daniel Sherman. The Development and Evaluation of a Text in the Topology of the Plane for Secondary Teachers. (The Florida State University, 1971.) Dis. Abst. Int. 32A: 6279-6280; May 1972.

Young, Jerry Leroy. Transformations and Isometries: A Unit For Prospective Secondary Mathematics Teachers. (University of Northern Colorado, 1971.) Dis. Abst. Int. 32B: 4095-4096; Jan. 1972.

Young, Norman Edmund. Effectiveness of Three Approaches to the Teaching of a Methods Course in Mathematics for Pre-Service Elementary Teachers as Related to Knowledge, Understanding, and Attitude. (Colorado State College, 1968.) Dis. Abst. 29A: 2598; Feb. 1969.

Zeddies, Melvin Louis. The Effectiveness of a National Science Foundation Institute in Mathematics as Reflected in Teacher and Student Attitudes and Student Achievement. (United States International University, 1972.) Dis. Abst. Int. 33A: 1067-1068; Sept. 1972.

5. MATHEMATICS RESEARCH LISTINGS, REVIEWS, AND SUMMARIES
1964-1973

Aiken, Lewis R., Jr. Nonintellective Variables and Mathematics Achievement: Directions for Research. *J. Sch. Psychol.* 8: 28-36; Mar. 1970.

Aiken, Lewis R., Jr. Attitudes Toward Mathematics. *R. Ed. Res.* 40: 551-596; Oct. 1970.

Aiken, Lewis R., Jr. Verbal Factors and Mathematics Learning: A Review of Research. *J. Res. Math. Ed.* 2: 304-313; Nov. 1971.

Aiken, Lewis R., Jr. Intellective Variables and Mathematics Achievement: Directions for Research. *J. Sch. Psychol.* 9: 201-212; 1971.

Aiken, Lewis R., Jr. Research on Attitudes Toward Mathematics. *Arith. Teach.* 19: 229-234; Mar. 1972.

Aiken, Lewis R., Jr. Language Factors in Learning Mathematics. *R. Ed. Res.* 42: 359-385; Summer 1972.

Aiken, Lewis R., Jr. Ability and Creativity in Mathematics. *R. Ed. Res.* 43: 405-432; Fall 1973.

Anderson, Rosemary C. Suggestions from Research -- Fractions. *Arith. Teach.* 16: 131-135; Feb. 1969.

Austin, Gilbert R.; Rogers, Bruce G.; and Walbesser, Henry H., Jr. The Effectiveness of Summer Compensatory Education: A Review of the Research. *R. Ed. Res.* 42: 171-181; Spring 1972.

Bittinger, Marvin L. A Review of Discovery. *Math. Teach.* 61: 140-146; Feb. 1968.

Briggs, Leslie J. and Angell, David. Programmed Instruction in Science and Mathematics. *R. Ed. Res.* 34: 354-373; June 1964.

Brousseau, Andre R. Mathematics Laboratories: Should We or Should We Not? *Sch. Sci. Math.* 73: 99-105; Feb. 1973.

Brown, Kenneth E. and Abell, Theodore L. Research in the Teaching of Elementary School Mathematics. *Arith. Teach.* 12: 547-549; Nov. 1965.

Brown, Kenneth E. and Abell, Theodore L. Research in the Teaching of High School Mathematics. *Math. Teach.* 59: 53-57; Jan. 1966.

Brown, Kenneth E. and Abell, Theodore L. Trends in Mathematics Offerings and Enrollments. Math Teach. 59: 652-655; Nov. 1966.

Brownell, William A. The Evaluation of Learning Under Dissimilar Systems of Instruction. Arith. Teach. 13: 267-274; Apr. 1966.

Burns, Paul C. Arithmetic Research That Has Made a Difference. El. Sch. J. 65: 386-392; Arp. 1965.

Burns, Paul C. and Davis, Arnold R. Early Research Contributions to Elementary School Mathematics. Arith. Teach. 17: 61-65; Jan. 1970.

Burns, Paul C. and Dessart, Donald J. A Summary of Investigations Relating to Mathematics in Elementary Education: 1964. Sch. Sci. Math. 65: 779-790; Dec. 1965.

Burns, Paul C. and Dessart, Donald J. A Summary of Investigations Relating to Mathematics in Secondary Education: 1964. Sch. Sci. Math. 66: 73-80; Jan. 1966.

Burns, Paul C. and Dessart, Donald J. A Summary of Investigations Relating to Mathematics in Elementary Education: 1965. Sch. Sci. Math. 66: 838-851; Dec. 1966.

Connolly, Austin J. Research in Mathematics Education and the Mentally Retarded. Arith. Teach. 20: 491-497; Oct. 1973.

Cruikshank, Douglas E. and Arnold, William R. Non-Decimal Instruction Revisited. El. Sch. J. 70: 108-111; Nov. 1969.

Dessart, Donald J. Mathematics in the Secondary School. R. Ed. Res. 34: 298-312; June 1964.

Earp, N. Wesley. Problems of Reading in Mathematics. Sch. Sci. Math. 71: 129-133; Feb. 1971.

Fennema, Elizabeth H. Models and Mathematics. Arith. Teach. 19: 635-640; Dec. 1972.

Fey, James. Classroom Teaching of Mathematics. R. Ed. Res. 39: 535-551; Oct. 1969.

Gorman, Charles J. A Critical Analysis of Research on Written Problems in Elementary School Mathematics. (University of Pittsburgh, 1967.) Dis. Abst. 28A: 4818-4819; June 1968.

Hanna, Gerald S. A Summary of the Literature of Geometry Prediction with Emphasis Upon Methodology and Theory. Sch. Sci. Math. 66: 723-728; Nov. 1966.

Hartung, Maurice L. Selected References on Elementary-School Instruction -- Arithmetic. *El. Sch. J.* 65: 163-166; Dec. 1964.

Heimer, Ralph T. Conditions of Learning in Mathematics: Sequence Theory Development. *R. Ed. Res.* 39: 493-508; Oct. 1969.

Heimer, Ralph T. and Lottes, John J. Toward a Theory of Sequencing: An Integrated Program of Research: The Theoretical Model and a Synopsis of the First Two Years of the Research Program. *J. Res. Math. Ed.* 4: 85-93; March 1973.

Huntington, Jefferson R. Linear Measurement in the Primary Grades: A Comparison of Piaget's Description of the Child's Spontaneous Conceptual Development and the SMSG Sequence of Instruction. *J. Res. Math. Ed.* 1: 219-232; Nov. 1970.

Jones, Phillip S. and Coxford, Arthur F., Jr. Academic and Professional Preparation of Secondary School Mathematics Teachers. *R. Ed. Res.* 34: 322-333; June 1964.

Kieren, Thomas E. Activity Learning. *R. Ed. Res.* 39: 509-522; Oct. 1969.

Kieren, Thomas E. Manipulative Activity in Mathematics Learning. *J. Res. Math. Ed.* 2: 228-234; May 1971.

Kilpatrick, Jeremy. Problem Solving in Mathematics. *R. Ed. Res.* 39: 523-534; Oct. 1969.

King, Bruce W. On Scrambling Instructional Stimuli. *J. Res. Math. Ed.* 1: 233-240; Nov. 1970.

Knaupp, Jonathan. Are Children's Attitudes Toward Learning Arithmetic Really Important? *Sch. Sci. Math.* 73: 9-15; Jan. 1973.

Knight, Carlton W., II. Doctoral Dissertation Research in Science and Mathematics Reported for Volume 31 of Dissertation Abstracts: Part II--Mathematics. *Sch. Sci. Math.* 73: 121-146; Feb. 1973.

Lackner, Lois M. Teaching Machines and Programed Instruction. *AV Comm. R.* 15: 181-198; Summer 1967.

Leeds, Donald S. Summary of Research Related to Reading in the Content Areas - Science and Mathematics. *J. Read. Specialist* 10: 88-95; Dec. 1970.

Lovell, Kenneth R. Intellectual Growth and Understanding Mathematics. J. Res. Math. Ed. 3: 164-182; May 1972.

Mangrum, Charles T. II and Knight, Carlton W. II. Doctoral Dissertation Research in Science and Mathematics Reported for Volume 28 of Dissertation Abstracts. Sch. Sci. Math. 70: 37-62; Jan. 1970.

Mangrum, Charles T. II and Knight, Carlton W. II. Doctoral Dissertation Research in Science and Mathematics Reported for Volume 29 of Dissertation Abstracts. Sch. Sci. Math. 71: 203-225; Mar. 1971.

Mangrum, Charles T., II and Knight, Carlton W. II. Doctoral Dissertation Research in Science and Mathematics Reported for Volume 30 of Dissertation Abstracts. Sch. Sci. Math. 72: 505-534; June 1972.

Mangrum, Charles and Morris, William. Doctoral Dissertation Research in Science and Mathematics Reported for 1965. Sch. Sci. Math. 68: 199-216; Mar. 1968.

Mangrum, Charles and Morris, William. Doctoral Dissertation Research in Science and Mathematics. Sch. Sci. Math. 69: 431-449; May 1969.

McGannon, Thomas. Creativity and Mathematics Education. Sch. Sci. Math. 72: 7-12; Jan. 1972.

Meconi, L.J. The Mathematically Gifted Student and Discovery Learning. Math. Teach. 60: 862-865; Dec. 1967.

Metzner, Seymour. The Elementary Teacher and the Teaching of Arithmetic: A Study in Paradox. Sch. Sci. Math. 71: 479-482; June 1971.

Murphy, Mary Oellerich and Polzin, Maxine A. A Review of Research Studies on the Teaching of the Metric System. J. Ed. Res. 62: 267-270; Feb. 1969.

Neale, Daniel C. The Role of Attitudes in Learning Mathematics. Arith. Teach. 16: 631-640; Dec. 1969.

Noffsinger, Thomas and Dobbs, Virginia. Teaching Arithmetic to Educable Mentally Retarded Children (Review). J. Ed. Res. 64: 177-184; Dec. 1970.

Pikaart, Len and Hicks, Randall. Research in Student Teaching of Mathematics. High Sch. J. 50: 238-247; Feb. 1967.

Postlethwaite, T. Neville (Editor). International Project for the Evaluation of Educational Achievement (IEA). *Int. R. Ed.* 15: 131-241; 1969.

Read, Cecil B. Periodical Articles Dealing With the History of Mathematics. *Sch. Sci. Math.* 70: 415-453; May 1970.

Reys, Robert E. Mathematics, Multiple Embodiment, and Elementary Teachers. *Arith. Teach.* 19: 489-493; Oct. 1972.

Riedesel, C. Alan. Problem Solving: Some Suggestions from Research. *Arith. Teach.* 16: 54-58; Jan 1969.

Riedesel, C. Alan. Recent Research Contributions to Elementary School Mathematics. *Arith. Teach.* 17: 245-252; Mar. 1970.

Riedesel, C. Alan. Research Suggestions: Use of Time in Teaching Elementary School Mathematics. *Arith. Teach.* 18: 177-179; Mar. 1971.

Riedesel, C. Alan and Suydam, Marilyn N. Research on Mathematics Education Grades K-8, for 1968. *Arith. Teach.* 16: 467-478; Oct. 1969.

Riedesel, C. Alan; Suydam, Marilyn N.; and Pikaart, Len. Research on Mathematics Education, Grades K-8, for 1967. *Arith. Teach.* 15: 531-544; Oct. 1968.

Rising, Gerald R. Research and Development in Mathematics and Science Education at the Minnesota School Mathematics and Science Center and the Minnesota National Laboratory. *Sch. Sci. Math.* 65: 811-820; Dec. 1965.

Roberge, James J. Recent Research on the Development of Children's Comprehension of Deductive Reasoning Schemes. *Sch. Sci. Math.* 72: 197-200; Mar. 1972.

Romberg, Thomas A. Current Research in Mathematics Education. *R. Ed. Res.* 39: 473-492; Oct. 1969.

Rosskopf, Myron F. Strategies for Concept Attainment in Mathematics. *J. Exp. Ed.* 37: 78-86; Fall 1968.

Rosskopf, Myron F. Piagetian Research and the School Mathematics Program. *Arith. Teach.* 19: 309-314; Apr. 1972.

Schlessinger, Fred R. and Helgeson, Stanley L. National Programs in Science and Mathematics Education. *Sch. Sci. Math.* 69: 633-643; Oct. 1969.

Smith, Gary R. Commentary Upon Suppes-Binford Report of Teaching Mathematical Logic to Fifth- and Sixth-Grade Pupils. *Arith. Teach.* 13: 640-643; Dec. 1966.

Summers, Edward G. Doctoral Dissertation Research in Science and Mathematics Reported for 1964. *Sch. Sci. Math.* 67: 37-49; Jan. 1967.

Summers, Edward G. and Hubrig, Billie. Doctoral Dissertation Research in Mathematics Reported for 1963. *Sch. Sci. Math.* 65: 505-528; June 1965.

Suydam, Marilyn N. The Status of Research on Elementary School Mathematics. *Arith. Teach.* 14: 684-689; Dec. 1967.

Suydam, Marilyn N. An Evaluation of Journal-Published Research Reports on Elementary School Mathematics, 1900-1965. (Volumes I and II.) (The Pennsylvania State University, 1967.) *Dis. Abst.* 28A: 3387-3388; Mar. 1968.

Suydam, Marilyn N. Research on Mathematics Education, Grades K-8, for 1969. *Arith. Teach.* 17: 511-527; Oct. 1970.

Suydam, Marilyn N. and Riedesel, C. Alan. Reports of Research and Development Activities 1957-1968. *Arith. Teach.* 16: 557-562; Nov. 1969.

Suydam, Marilyn N. and Riedesel, C. Alan. Research Findings Applicable in the Classroom. *Arith. Teach.* 16: 640-642; Dec. 1969.

Suydam, Marilyn N. and Weaver, J. Fred. Research on Mathematics Education (K-12) Reported in 1970. *J. Res. Math. Ed.* 2: 257-298; Nov. 1971.

Suydam, Marilyn N. and Weaver, J. Fred. Research on Mathematics Education (K-12) Reported in 1971. *J. Res. Math. Ed.* 3: 196-232; Nov. 1972.

Suydam, Marilyn N. and Weaver, J.F. Research on Mathematics Education (K-12) Reported in 1972. *J. Res. Math. Ed.* 4: 205-242; Nov. 1973.

Tanner, R. Thomas. Discovery as an Object of Research. *Sch. Sci. Math.* 69: 647-655; Oct. 1969.

Vance, James H. and Kieren, Thomas E. Laboratory Settings in Mathematics: What Does Research Say to the Teacher? *Arith. Teach.* 18: 585-589; Dec. 1971.

Vinsonhaler, John F. and Boss, Ronald K. A Summary of Ten Major Studies on CAI Drill and Practice. Ed. Tech. 12: 29-32; July 1972.

Weaver, J. Fred. Research on Elementary-school Mathematics - 1963. Arith. Teach. 11: 273-275; April 1964.

Weaver, J. Fred. Research on Elementary-school Mathematics - 1964. Arith. Teach. 12: 382-387; May 1965.

Weaver, J. Fred. Addenda to the May, 1965, Report on Research in Elementary School Mathematics. Arith. Teach. 12: 577-578; Nov. 1965.

Weaver, J. Fred. Research on Mathematics Education, Grades K-8, for 1965. Arith. Teach. 13: 414-427; May 1966.

Weaver, J. Fred. Differentiated Instruction and School-Class Organization for Mathematical Learning Within the Elementary Grades. Arith. Teach. 13: 495-506; Oct. 1966.

Weaver, J. Fred. Research on Mathematics Education, Grades K-8, for 1966. Arith. Teach. 14: 509-517; Oct. 1967.

Weaver, J. Fred. Listing of Doctoral Theses and Projects Summarized in Dissertation Abstracts. Investigations in Math. Ed. 2: 80-94; July 1969.

Weaver, J. Fred. Listing of Doctoral Theses and Projects Summarized in Dissertation Abstracts, January thru June 1969. Investigations in Math. Ed. 3: 83-92; Jan. 1970.

Weaver, J. Fred and Gibb, Glenadine. Mathematics in the Elementary School. R. Ed. Res. 34: 273-285; June 1964.

White, Richard T. Research into Learning Hierarchies. R. Ed. Res. 43: 361-375; Summer 1973.

Williford, Harold. What Does Research Say About Geometry in the Elementary School? Arith. Teach. 19: 97-104; Feb. 1972.

Zoll, Edward J. Research in Programmed Instruction in Mathematics. Math. Teach. 62: 103-110; Feb. 1969.

6. RESEARCH REPORTS AVAILABLE THROUGH ERIC

Abramson, Theodore and Weiner, Max. *Evaluation of the New York City Computer Assisted Instruction Project in Elementary Arithmetic, Second Year, 1969-70.* (AERA paper.) Feb. 1971. ERIC: ED 047 962. 11 p.

Adkins, Dorothy C. and others. *Final Report on Preschool Mathematics Curriculum Project.* (OEO project.) Nov. 1969. ERIC: ED 037 347. 34 p.

Aiken, Lewis R., Jr. *Sex Differences in Attitude and Achievement in Mathematics.* 1971. ERIC: ED 049 922. 25 p.

Aiken, Lewis R., Jr. *Language Factors in Learning Mathematics.* (ERIC/SMEAC Mathematics Education Report.) Oct. 1972. ERIC: ED 068 340. 47 p.

Alford, Roy W., Jr. *Teaching Mathematical Concepts to Rural Preschool Children Through a Home-Oriented Program.* (Appalachia Educational Laboratory project.) June 1970. ERIC: ED 063 992. 168 p.

Anderson, James G. and Johnson, William H. *Social and Cultural Characteristics of Mexican-American Families in South El Paso, Texas: Interim Report of the Mathematics Education Program.* (NCTM paper.) Dec. 1968. ERIC: ED 026 175. 47 p.

Antkoviak, Bernadette M. *Role-Play and Characterization as Techniques for Teaching Primary Level Number Concepts.* (Master's degree, Bucknell University.) April 1972. ERIC: ED 061 098. 20 p.

Archer, N. Sidney and Woodlen, Milton C. *The Teacher, Programed Materials, and Instructional Interaction--An Assessment of Five Selected Conditions of Teacher and Program Integration.* (Final report.) May 1967. ERIC: ED 019 009. 26 p.

Arends, Richard and Ford, Paul M. *Acceleration and Enrichment in the Junior High School: A Follow-Up Study.* July 1964. ERIC: ED 028 558. 46 p. Also ED 001 220. 45 p.

Austin, Gilbert R. *A Longitudinal Evaluation of Mathematical Computational Abilities of New Hampshire's Eighth Graders: 1963-1967.* (OE final report.) Aug. 1969. ERIC: ED 039 147. 110 p.

Baley, John D. and Benesch, Mary P. *A System for Individualized Math Instruction in Secondary Schools.* July 1969. ERIC: ED 050 555. 9 p.

Bassler, Otto C. *Comparison of Two Teaching Techniques in Elementary School Mathematics.* July 1968. ERIC: ED 023 595. 53 p.

Bassler, Otto C. and others. *Comparison of Two Instructional Strategies for Teaching the Solution to Verbal Problems.* (OE final report.) Dec. 1972. ERIC: ED 075 260. 69 p.

Beardslee, Edward C. and Jerman, Max E. *Linguistic Variables in Verbal Arithmetic Problems.* 1973. ERIC: ED 073 926. 26 p.

Beattie, Ian D. and Deichmann, John W. *Error Trends in Solving Number Sentences in Relation to Workbook Format Across 1st and 2nd Grades.* (AERA paper.) Apr. 1972. ERIC: ED 064 170. 9 p.

Beattie, Ian D. and others. *The Relationship of Achievement and Attitudes Towards Mathematics in the Elementary School: A Longitudinal Study.* (AERA paper.) Feb. 1973. ERIC: ED 076 424. 15 p.

Beberman, Max and Van Horn, Charles. *A Study to Determine the Relative Effectiveness of the Use of a Series of Filmed Demonstrations in Teacher Education for a New High School Mathematics Curriculum.* 1960. ERIC: ED 003 502. 67 p.

Begle, Edward G. *Teacher Knowledge and Student Achievement in Algebra.* (SMSG Report 9.) 1972. ERIC: ED 064 175. 109 p.

Benzinger, Thomas L. *The Effects of Instruction on the Development of the Concept of Conservation of Numerousness by Kindergarten Children.* Oct. 1970. ERIC: ED 049 821. 46 p.

Bereiter, Carl and others. *Curriculum Development and Evaluation: Research and Development Program on Preschool Disadvantaged Children.* (OE final report.) May 1969. ERIC: ED 036 664. 139 p.

Berger, Raymond M. *A Study of the Attributes of Applicants to National Science Foundation Summer Institutes in 1964.* Aug. 1965. ERIC: ED 011 856. 365 p.

Bernbaum, Marcia. *Number and Concept Development: An Abstract Bibliography.* (ERIC/ECE publication.) Oct. 1971. ERIC: ED 057 921. 20 p.

Boe, Barbara L. *Secondary School Pupils' Perception of the Plane Sections of Selected Solid Figures.* (Wisconsin R & D Center report 13.) Nov. 1966. ERIC: ED 010 515. 43 p.

Bonfield, John R. *Predictors of Achievement for Educable Mentally Retarded Children.* (OE final report.) Sept. 1968. ERIC: ED 025 885. 136 p.

Boozer, Robert F. and Lindvall, C. M. *An Investigation of Selected Procedures for the Development and Evaluation of Hierarchical Curriculum Structures.* (AERA paper.) Feb. 1971. ERIC: ED 049 287. 36 p.

Bourne, Lyle E., Jr. *Long-Term Retention of Simple Concepts.* (Wisconsin R & D Center report.) Nov. 1971. ERIC: ED 073 941. 19 p.

Branca, Nicholas A. *Strategies in Learning Mathematical Structures, A Brief Report of the Study.* Apr. 1971. ERIC: ED 049 056. 12 p.

Briggs, Leslie J. and Campbell, Vincent M. *Adjusting Self-Instruction Programs to Individual Differences--Studies of Cueing, Responding and Bypassing.* July 1961. ERIC: ED 003 661. 66 p.

Bright, George W. *Geometric Problem Solving Abilities of Children in the Primary Grades.* (NCTM paper.) Apr. 1973. ERIC: ED 076 414. 27 p.

Brill, Richard G. and others. *Pilot Program with Seriously Emotionally Disturbed Deaf Children.* (OE final report.) June 1969. ERIC: ED 034 369. 348 p.

Brown, Kenneth E. and Abell, Theodore L. *Analysis of Research in the Teaching of Mathematics.* (OE report.) 1965. ERIC: ED 034 689. 104 p.

Brown, Kenneth E. and others. *Analysis of Research in the Teaching of Mathematics 1959 and 1960.* (OE report.) 1963. ERIC: ED 034 688. 75 p.

Brown, O. Robert, Jr. *Achievement of Students from Groups Instructed by Programed Materials, Classroom Teacher, or Both.* July 1964. ERIC: ED 020 675. 38 p.

Buchanan, Anne E. and others. *Effects of Increased Home-School Contact on Performance and Attitudes in Mathematics.* (Wisconsin R & D Center report.) June 1969. ERIC: ED 036 446. 10 p.

Bushnell, Don D. *The Production and Validation of Educational Systems Packages for Occupational Training of Depressed Area Students.* (Final report.) Mar. 1966. ERIC: ED 010 014.

Byrne, Mary Ann and Kane, Robert B. *Measuring Vocabulary and Symbol Familiarity in the Language of Mathematics.* (AERA paper.) Feb. 1971. ERIC: ED 047 958. 11 p.

Cahen, Leonard S. and others. *A Comparison of School Mean Achievement Scores with Two Estimates of the Same Scores Obtained by the Item-Sampling Technique.* Nov. 1970. ERIC: ED 052 241. 5 p.

Camille, Sister M. (editor). Studies on Reading and on Education of the Mentally Handicapped: Research Abstracts, Volume IV. 1962. ERIC: ED 025 086. 95 p.

Campbell, Vincent N. and others. Effects of Mathematical Ability, Pretraining, and Interest on Self-Direction in Programmed Instruction. Oct. 1963. ERIC: ED 014 914. 19 p.

Carey, Russell L. and Steffe, Leslie P. An Investigation in the Learning of Equivalence and Order Relations by Four- and Five-Year-Old Children. (OE report.) Dec. 1968. ERIC: ED 045 178. 212 p.

Carll, Carol G. and Davis, O. L., Jr. Verbal Teaching Behaviors of Teachers of Mathematics in Second and Fifth Grades. Feb. 1970. ERIC: ED 051 135. 12 p.

Carpenter, Thomas P. The Role of Equivalence and Order Relations in the Development and Coordination of the Concepts of Unit Size and Number of Units in Selected Conservation Type Measurement Problems. (Wisconsin R & D report.) Aug. 1971. ERIC: ED 058 324. 154 p.

Carpenter, Thomas P. The Relation Between the Development of Certain Conservation and Measurement Concepts. 1972. ERIC: ED 062 140. 16 p.

Carpenter, Thomas P. The Performance of First Grade Students on a Nonstandard Set of Measurement Tasks. (OE report.) Dec. 1971. ERIC: 070 662. 25 p.

Case, James B. Treating Chemical Equilibrium Mathematically in Secondary Schools: A Preliminary Investigation. Mar. 1970. ERIC: ED 043 483. 9 p.

Cawley, John F. and Goodman, John O. Arithmetical Problem Solving: A Program Demonstration by Teachers of the Mentally Handicapped. (OE report.) 1967. ERIC: ED 031 823. 78 p.

Cech, Joseph Philip. The Effect the Use of Desk Calculators Has on Attitude and Achievement in Ninth-Grade General Mathematics Classes. June 1970. ERIC: ED 041 757. 50 p.

Church, John G. and others. New Media for Improvement of Algebra Instruction. June 1964. ERIC: ED 003 234. 441 p.

Colette, Sister M. Research Abstracts, Volume VIII. 1966. ERIC: ED 012 221. 68 p.

Collins, Kenneth. An Investigation of the Variables of Bloom's Mastery Learning Model for Teaching Mathematics. (AERA paper.) Apr. 1972. ERIC: ED 065 596. 20 p.

Cook, Blair. An Analysis of Arithmetic, Linguistic, and Algebraic Structural Variables that Contribute to Problem Solving Difficulty in Algebra Word Problems. (AERA paper.) Feb. 1973. ERIC: ED 076 433. 17 p.

Cooney, Thomas J. A Basis for Training Mathematics Teachers. (NCTM paper.) Apr. 1971. ERIC: ED 049 064. 11 p.

Coulson, John E. Research with a Program on Geometric Inequalities. June 1964. ERIC: ED 003 208. 85 p.

Coulson, John E. The Teacher's Role in Classes Using Self-Study Materials. May 1967. ERIC: ED 015 169. 3 p.

Coulson, John E. and others. Nonprogram Variables in the Application of Programed Instruction. July 1965. ERIC: ED 003 217. 39 p.

Crosby, Gwladys and others. Mathematics Individual Learning Experiment. 1960. ERIC: ED 003 558. 114 p.

Davis, Keith G. and Banning, James H. The Role of Personality and Attitude Variables in Programmed Instruction. (Final report.) Apr. 1968. ERIC: ED 022 364. 30 p.

Davison, Hugh M. and Patrick, Robert B. The Effectiveness of the Documentary Sound-Film as a Supplement in Secondary School Teacher Education--A Followup of First Year Teacher Performance. Sept. 1963. ERIC: ED 003 608. 62 p.

Deep, Donald. The Effect of an Individually Prescribed Instruction Program in Arithmetic on Pupils at Different Ability Levels. 1966. ERIC: ED 010 210. 104 p.

Deichmann, John and Beattie, Ian. Spatial and Modality Effects in Simple Mathematical Computation. (AERA paper.) Apr. 1972. ERIC: ED 062 194. 10 p.

Della-Piana, Gabriel M. and others. Sequence Characteristics of Text Materials and Transfer of Learning, Part I--Experiments in Discovery Learning. Dec. 1965. ERIC: ED 003 346. 203 p.

DeVenney, William S. Preliminary Report on an Experiment with Junior High School Very Low Achievers in Mathematics. (SMSG Report 6.) 1968. ERIC: ED 021 754. 117 p.

DeVenney, William S. *Final Report on an Experiment with Junior High School Very Low Achievers in Mathematics.* (SMSG Report 7.) 1969. ERIC: ED 064 173. 57 p.

Devitt, Joseph J. *Intellectual Stimulation of Gifted Pupils in Small Secondary Schools Through Televised Instruction.* 1961. ERIC: ED 001 286. 143 p.

Diller, Leonard and others. *Psychological and Educational Studies with Spina Bifida Children.* (OE final report.) July 1969. ERIC: ED 034 347. 135 p.

Divers, Benjamin P., Jr. and Steffe, Leslie P. *The Ability of Kindergarten and First Grade Children to Use the Transitive Property of Three Length Relations in Three Perceptual Situations.* Feb. 1971. ERIC: ED 048 936. 33 p.

Doak, E. Dale. *An Evaluation Approach Designed to Identify the Levels of Thinking Existent in Select Classrooms as Exhibited by Teacher and Student Verbal Behavior.* (Final report.) Mar. 1966. ERIC: ED 015 817. 13 p.

Dossey, John A. and Henderson, Kenneth B. *The Relative Effectiveness of Four Strategies for Teaching Disjunctive Concepts in Mathematics.* 1972. ERIC: ED 063 116. 19 p.

Dramer, Dan. *Self-Contained, Reading-Oriented Classes in Secondary Schools.* May 1970. ERIC: ED 041 705. 8 p.

DuBois, Philip H. and Feierabend, R. L. *Psychological Problems and Research Methods in Mathematics Training.* 1959. ERIC: ED 002 915. 28 p.

Dunlap, William and others. *Differential Effects of Activity-Oriented vs. Textbook-Oriented Mathematics Instruction for Elementary School Children with Learning and Behavior Problems.* 1971. ERIC: ED 057 546. 202 p.

Dwight, Leslie A. and others. *Exploratory Type of Evaluation of TV Training of Elementary Mathematics Teachers.* (Final report.) 1966. ERIC: ED 011 057. 14 p.

Dye, David L. *Status of Mathematics Education in Minnesota Schools.* 1966. ERIC: ED 018 394. 34 p.

Easterday, Kenneth. *Study of Mathematics Teachers in Alabama.* 1967. ERIC: ED 014 454. 98 p.

Edwards, Keith J. and others. *Games and Teams: A Winning Combination.* (OE report.) July 1972. ERIC: ED 067 248. 40 p.

Ellis, June and Corum, Al. *Functions of the Calculator in the Mathematics Laboratory for Low Achievers.* (OE report.) 1969. ERIC: ED 040 847. 46 p.

Ellis, E. N. *Survey of Achievement in Mathematics in Grade 7 of Vancouver Schools May 25-28, 1971.* June 1971. ERIC: ED 058 254. 13 p.

Ellis, E. N. *Survey of Achievement in Arithmetic in Year Three of Vancouver Schools, May 29-June 2, 1972.* June 1972. ERIC: ED 074 113. 9 p.

Ericksen, Gerald L. and Ryan, James J. *A Study of the Effects of Experimental Programs on Pupil Achievement Observed During First Three Years of the Project, Secondary Mathematics Evaluation Project.* (Interim report.) Nov. 1966. ERIC: ED 011 977. 50 p.

Feldman, Katherine Vorwerk. *The Effects of Number of Positive and Negative Instances, Concept Definition, and Emphasis of Relevant Attributes in the Attainment of Mathematical Concepts.* (Wisconsin R & D report.) Nov. 1972. ERIC: ED 073 942. 120 p.

Fennema, Elizabeth. *A Study of the Relative Effectiveness of a Meaningful Concrete and a Meaningful Symbolic Model in Learning a Selected Mathematical Principle.* (Wisconsin R & D report.) July 1969. ERIC: ED 036 444. 205 p.

Fennema, Elizabeth. *Mathematics Learning and the Sexes: A Review.* (AERA paper.) Feb. 1973. ERIC: ED 076 392. 24 p.

Fisher, Maurice D. *Strategies for Developing Reciprocity Between Educational Researchers and School Personnel: Providing Teachers with Feedback on Students' Computer Assisted Instruction Performance.* (AERA paper.) Feb. 1973. ERIC: ED 073 678. 34 p.

Fitzgerald, William M. *Self-Selected Mathematics Learning Activities.* 1965. ERIC: ED 003 348. 105 p.

Fitzgerald, William M. *About Mathematics Laboratories.* 1972. ERIC: ED 056 895. 33 p.

Fox, David J. and Weinberg, Emmeline. *Summer Schools for Junior High and Intermediate School Pupils: Evaluation of New York City Title I Educational Projects, 1966-67.* Nov. 1967. ERIC: ED 034 010. 151 p.

Fox, Karen F. A. and Jung, Steven M. *A Pilot Study of the Use of Incentives to Enhance School Learning.* (AERA paper.) Apr. 1972. ERIC: ED 062 668. 26 p.

Frayer, Dorothy Ann. *Effects of Number of Instances and Emphasis of Relevant Attribute Values on Mastery of Geometric Concepts by Fourth- and Sixth-Grade Children (Parts 1 and 2)*. (Wisconsin R & D Center report.) Mar. 1970. ERIC: ED 040 878. 125 p.

Furno, Orlando F. and Collins, George J. *Class Size and Pupil Learning*. Oct. 1967. ERIC: ED 025 003. 153 p.

Gall, Meredith D. and others. *Improving Teachers' Mathematics Tutoring Skills Through Microteaching: A Comparison of Videotape and Audiotape Feedback*. Feb. 1971. ERIC: ED 049 034. 22 p.

Garms, Walter I. and Smith, Mark C. *Development of a Measure of Educational Need and Its Use in a State School Support Formula*. June 1969. ERIC: ED 038 739. 92 p.

Gawronski, Jane Donnelly. *Inductive and Deductive Learning Styles in Junior High School Mathematics: An Exploratory Study*. 1971. ERIC: ED 059 892. 20 p.

Gay, Lorraine R. *An Investigation into the Differential Effectiveness for Males and Females, of Three CAI Treatments on Delayed Retention of Mathematical Concepts*. Nov. 1969. ERIC: ED 034 426. 49 p.

Gay, Lorraine R. *Temporal Position of Reviews and Its Effect on the Retention of Mathematical Rules*. Feb. 1971. ERIC: ED 047 960. 85 p.

Gibbs, Doris and Brgoch, Ann. *Individualizing Mathematics in the Small School*. 1964. ERIC: ED 036 365. 30 p.

Ginsberg, Rose. *Mathematical Concept Learning by the Pre-School Child*. (Final report.) Aug. 1971. ERIC: ED 065 171. 28 p.

Gipson, Joella. *Use of Computer Assisted Instruction in Mathematics for Disadvantaged Seventh Grade Youth*. 1971. ERIC: ED 049 057. 10 p.

Glaser, Robert and others. *Studies of the Use of Programed Instruction in the Classroom*. (OE report.) May 1966. ERIC: ED 010 208. 194 p.

Goldberg, Miriam L. and others. *A Comparison of Mathematics Programs for Able Junior High School Students, Volume I*. (Final report.) May 1966. ERIC: ED 010 056. 311 p. Also ED 010 057. 124 p.

Goodwin, William L. and others. *The Effects on Achievement Test Results of Varying Conditions of Experimental Atmosphere, Notice of Test, Test Administration, and Test Scoring*. (Wisconsin R & D Center report.) 1965. ERIC: ED 010 202. 56 p.

Gordon, C. Wayne. *Preliminary Evaluation Report on the Los Angeles City Schools, SB 28 Demonstration Program in Mathematics*. Oct. 1969. ERIC: ED 034 686. 66 p.

Goolsby, Thomas M., Jr. *Evaluation of Cognitive Development: An Observational Technique--Pre-Mathematics Skills Inventory*. June 1969. ERIC: ED 046 989. 33 p.

Gray, David. *Final Report on the 1967 Summer Basic Skills Program*. 1968. ERIC: ED 023 563. 32 p.

Gregory, John William. *A Study of the Impact of the Verbal Environment in Mathematics Classrooms on Seventh Grade Students' Logical Abilities*. (OE final report.) July 1972. ERIC: ED 064 178. 116 p.

Grouws, Douglas A. *Some Factors Associated with Children's Solving Performance on Four Types of Mathematical Open Sentences*. (AERA paper.) Apr. 1972. ERIC: ED 061 105. 32 p.

Hagan, Anastasia M. *An Analysis of the Relationship of Scheduled Class Time and Achievement Under Two Methods of Instruction*. June 1967. ERIC: ED 030 203. 46 p.

Harper, E. Harold. *The Identification of Socio-economic Differences and Their Effect on the Teaching of Readiness for "New Math Concepts" in the Kindergarten*. (OE final report.) Apr. 1970. ERIC: ED 040 852. 29 p.

Harris, Margaret L. and Romberg, Thomas A. *Measuring Mathematics Concept Attainment: Boys and Girls*. (Wisconsin R & D Center report.) Nov. 1971. ERIC: ED 070 659. 34 p.

Harvin, Virginia R. and Gilchrist, Mary A. *Mathematics Teacher--A Reading Teacher?* 1970. ERIC: ED 041 702. 11 p.

Hater, Mary Ann and Kane, Robert B. *The Cloze Procedure as a Measure of the Reading Comprehensibility and Difficulty of Mathematical English*. 1970. ERIC: ED 040 881. 25 p.

Haven, Elizabeth W. *Factors Associated with the Selection of Advanced Academic Mathematics Courses by Girls in High School*. Mar. 1972. ERIC: ED 062 173. 75 p.

Heimer, Ralph T. and others. A Study of Paradigms for the Construction and Evaluation of CAI Curricular Materials in Mathematics. Volume I: Philosophical Studies. (Final report.) Dec. 1971. ERIC: ED 064 163. 101 p.

Herring, Lewis Homer. Provisions and Procedures for the Rapid Learner in Selected Texas Junior High Schools. May 1962. ERIC: ED 021 351. 31 p.

Herriot, Sarah T. The Slow Learner Project: The Secondary School "Slow Learner" in Mathematics. (SMSG Report 5.) 1967. ERIC: ED 021 755. 168 p.

Hewett, Frank M. and others. The Santa Monica Project: Demonstration and Evaluation of an Engineered Classroom Design for Emotionally Disturbed Children in the Public School, Phase 1, Elementary Level. (OE report.) Dec. 1967. ERIC: ED 031 026. 97 p.

Hickey, Albert and others. Requirements for Graphic Teaching Machines. Dec. 1962. ERIC: ED 003 614. 77 p.

Higgins, Jon L. The Mathematics Through Science Study: Attitude Changes in a Mathematics Laboratory. (SMSG Report 8.) 1969. ERIC: ED 064 174. 12 p.

Higgins, Jon L. (editor). Investigations in Mathematics Education. 1972. ERIC: ED 061 078. 73 p. ED 063 161. 74 p. ED 065 337. 71 p.

Higgins, Jon L. (editor). Research Reporting Sections, National Council of Teachers of Mathematics 50th Annual Meeting, Chicago, Illinois, April 16-19, 1972. (ERIC/SMEAC publication.) Apr. 1972. ERIC: ED 064 149. 78 p.

Higgins, Jon L. (editor). Research Reporting Sections, National Council of Teachers of Mathematics 51st Annual Meeting, Houston, Texas, April 25-28, 1973. (ERIC/SMEAC publication.) Apr. 1973. ERIC: ED 076 387. 109 p.

Hillson, Henry T. Report on the Summer Session of the College Bound Program, July-August, 1967. 1967. ERIC: ED 016 728. 8 p.

Hively, Wells, II. Programmed Correspondence Courses in Algebra and Geometry for Inservice Teacher Training: Field Studies. (Final report.) Aug. 1968. ERIC: ED 025 430. 155 p.

Hogan, Robert T. and Horsfall, Robert B. An Evaluation of a High School Tutorial Program. July 1970. ERIC: ED 041 095. 23 p.

Hollis, Loye Y. *A Study of the Effect of Mathematics Laboratories on the Mathematical Achievement and Attitude of Elementary School Students.* (OE final report.) July 1972. ERIC: ED 066 315. 24 p.

Homme, Lloyd E. *A Demonstration of the Use of Self-Instructional and Other Teaching Techniques for Remedial Instruction of Low-Achieving Adolescents in Reading and Mathematics.* (Final report.) Aug. 1965. ERIC: ED 003 150. 118 p.

Howe, Ann C. *A Study of the Relationship of Geometry to Acquisition of Conservation of Liquid.* Apr. 1972. ERIC: ED 064 105. 3 p.

Hudgins, Bryce B. and Smith, Louis M. *An Analysis of Laboratory and Classroom Group Functioning.* (OE final report.) No date. ERIC: ED 002 939. 163 p.

Isenbarger, Katherine U. and others. *A Half Century of Teaching Science and Mathematics.* 1950. ERIC: ED 011 839. 207 p.

Jacobs, Paul I. *The Development, Use and Evaluation of Self-Instructional Programs in Israel.* Jan. 1968. ERIC: ED 051 666. 60 p.

Jahn, Harvey R. and Medlin, William K. *Reforms in Mathematics Education for Secondary Schools: Historical Trends in Russian and American Education.* (Final report.) Feb. 1969. ERIC: ED 029 793. 395 p.

Jamison, Dean and others. *Cost and Performance of Computer-Assisted Instruction for Education of Disadvantaged Children.* July 1971. ERIC: ED 054 978. 59 p.

Jerman, Max. *Instruction in Problem Solving and an Analysis of Structural Variables That Contribute to Problem-Solving Difficulty.* Nov. 1971. ERIC: ED 059 039. 129 p.

Jerman, Max E. *Predicting the Relative Difficulty of Problem-Solving Exercises in Arithmetic.* (OE final report.) Dec. 1972. ERIC: ED 076 678. 65 p.

Johnson, David C. *An Investigation in the Learning of Selected Parts of a Boolean Algebra by Young Children.* (AERA paper.) Apr. 1972. ERIC: ED 061 094. 48 p.

Jones, Rowen C. and others. *A Diagnostic and Activity Based Arithmetic Program for Emotionally Disturbed Children.* 1971. ERIC: ED 057 547. 188 p.

Jourdane, John R. *A Bilingual Math-Science Learning Center.* Sept. 1970. ERIC: ED 051 716. 5 p.

Kane, Robert B. and Holz, Alan W. A Technique for Studying the Organization of Mathematics Text Materials. (OE final report.) Nov. 1972. ERIC: ED 071 923. 344 p.

Karnes, Merle B. and Wollersheim, Janet P. An Intensive Differential Diagnosis of Partially Seeing Children to Determine the Implications for Education. Mar. 1963. ERIC: ED 030 224. 83 p.

Kavett, Phyllis F. A Study of the Teaching of Non-Decimal Systems of Numeration in the Elementary School. (OE final report.) Apr. 1969. ERIC: ED 041 761. 225 p.

Kellett, Jeremiah J. Bridging the Grade Six to Seven Gap with Continuous Progress. 1966. ERIC: ED 010 109. 33 p.

Keough, John J. and Burke, Gerard W. Utilizing an Electronic Calculator to Facilitate Instruction in Mathematics in the 11th and 12th Grades. (Final report.) July 1969. ERIC: ED 037 345. 60 p.

Kim, Sharon and Leton, Donald A. Analysis of Mathematical Abilities Required for Success in Ninth-Grade Mathematics. Dec. 1966. ERIC: ED 010 420. 112 p.

King, Irv. Ikonic and Symbolic Representation. A Study of Mathematical Reasoning. 1973. ERIC: ED 076 434. 14 p.

Kinzer, John R. and Worcester, Dean A. The Effectiveness of Adjunct Auto-Instruction. 1965. ERIC: ED 003 386. 152 p. Also ED 003 336. 52 p.

Kissell, Mary Ann and Yeager, John L. An Investigation of the Efficiency of Various Observational Procedures. (AERA paper.) Feb. 1971. ERIC: ED 048 372. 28 p.

Klausmeier, Herbert J. and O'Hearn, George T. (editors). Research and Development Toward the Improvement of Education. 1968. ERIC: ED 043 566. 171 p.

Kohen-Raz, Reuven. Developmental Patterns of Static Balance Ability and Their Relation to Cognitive School Readiness. (OE final report.) Sept. 1969. ERIC: ED 036 039. 89 p.

Kress, Roy A. and Johnson, Marjorie S. A Statistical Evaluation of the Educational Improvement of the Philadelphia Board of Education for the School Year, 1965-66. 1967. ERIC: ED 021 899. 47 p.

Kulm, Gerald. Measuring the Readability of Elementary Algebra Using the Cloze Technique. (AERA paper.) Feb. 1971. ERIC: ED 047 972. 24 p.

Kulm, Gerald and others. *The Effectiveness of Textbook, Student Generated, and Pictorial Versions of Presenting Mathematical Problems.* 1972. ERIC: ED 062 139. 11 p.

Lackner, Lois M. *The Teaching of Two Concepts in Beginning Calculus by Combinations of Inductive and Deductive Approaches.* (Final report.) June 1968. ERIC: ED 025 446. 363 p.

Laliberte, Richard A. *Evaluation of the 1965 Secondary Summer School Program.* May 1966. ERIC: ED 012 217. 53 p.

Lankford, Francis G., Jr. *Some Computational Strategies of Seventh Grade Pupils.* (OE final report.) Oct. 1972. ERIC: ED 069 496. 96 p.

Larson, Daro E. *Stability of Gains in Intellectual Functioning Among White Children Who Attended a Preschool Program in Rural Minnesota.* (OE final report.) Feb. 1972. ERIC: ED 066 227. 14 p.

Leffin, Water William. *A Study of Three Concepts of Probability Possessed by Children in the Fourth, Fifth, Sixth and Seventh Grades.* (Wisconsin R & D Center report.) Sept. 1971. ERIC: ED 070 657. 281 p.

Lipson, Joseph. *Transfer and Generalization in Individually Prescribed Instruction.* Feb. 1966. ERIC: ED 010 521. 29 p.

Lockley, J. Elaine. *A Comparative Study of Some Cluster Analytic Techniques with Application to the Mathematics Achievement in Junior High Schools.* Feb. 1971. ERIC: ED 047 957. 9 p.

Longstaff, F. R. and others. *Desk Calculators in the Mathematics Classroom.* June 1968. ERIC: ED 029 498. 11 p.

Love, William P. *Individual Versus Paired Learning of an Abstract Algebra Presented by Computer Assisted Instruction.* 1969. ERIC: ED 034 403. 215 p.

Lovell, Kenneth. *Intellectual Growth and Understanding Mathematics.* (ERIC/SMEAC Mathematics Education Report.) Feb. 1971. ERIC: ED 049 069. 25 p.

Malinen, Paavo. *The Learning of Elementary Algebra: An Empirical Investigation of the Results of Learning in a Simplified School Learning System.* Jan. 1969. ERIC: ED 033 024. 85 p.

Mann, Philip H. *An Investigation of the Effect of Group Counseling on Educable Mentally Retarded Boys' Concepts of Themselves in School.* (OE report.) 1967. ERIC: ED 022 283. 82 p.

Marshall, J. Laird and Fischbach, Thomas J. *Evaluation of Patterns in Arithmetic in Grades 1-4, 1970-71: Effects on Teachers.* (Wisconsin R & D Center report.) Mar. 1972. ERIC: ED 065 315. 93 p.

Martin, J. Larry. An *Investigation of the Development of Selected Topological Properties in the Representational Space of Young Children.* (AERA paper.) 1973. ERIC: ED 075 198. 35 p.

Mathews, Walter M. *Computer-Generated Verbal Testing Reporting.* Apr. 1972. ERIC: ED 064 358. 14 p.

Maveske, George W. and Weinfeld, Frederic D. *Factor Analyses of Achievement Measures from the Educational Opportunities Survey.* Jan. 1967. ERIC: ED 013 280. 21 p.

Maynard, Fred J. and Strickland, James F., Jr. *A Comparison of Three Methods of Teaching Selected Mathematical Content in Eighth and Ninth Grade General Mathematics Courses.* (OE final report.) Aug. 1969. ERIC: ED 041 763. 214 p.

McLeod, Doublas B. *The Effectiveness of an Inservice Program for Implementing an Activity Approach to Learning Mathematics in the Elementary School.* (Wisconsin R & D Center report.) Nov. 1972. ERIC: ED 073 943. 194 p.

Meyer, Rochelle Wilson. *The Identification and Encouragement of Mathematical Creativity in First Grade Students.* (Wisconsin R & D Center Report 112.) Jan. 1970. ERIC: ED 038 292. ED 038 293. 96 p. ED 038 294. 84 p.

Meade, William F. and Griffin, Lawrence M. *A Comparative Study of Student Achievement and Other Selected Student Characteristics in a Program of Individualized Instruction in Mathematics and in a Program of Traditional Instruction in Mathematics in Grades 1-6.* Aug. 1969. ERIC: ED 037 362. 156 p.

Miller, Donald M. and others. *Multimedia Instructional Programs in Mathematics--Demonstration and Experimentation: The Assimilation of New Media in the Instructional Program of a Rural School.* (Final report.) June 1966. ERIC: ED 028 637. 387 p.

Miller, Ruth and Hess, Robert D. *The Effect upon Students' Motivation of Fit Between Student Ability and the Level of Difficulty of CAI Programs.* Mar. 1972. ERIC: ED 062 831. 43 p.

Mills, Thomas J. *Secondary School Science and Mathematics Teachers, Characteristics and Service Loads.* 1963. ERIC: ED 030 573. 50 p.

Milner, Stuart. The Effects of Computer Programming on Performance in Mathematics. (AERA paper.) Feb. 1973. ERIC: ED 076 391. 41 p.

Moody, William B. and others. The Effect of Class Size on the Learning of Mathematics: A Parametric Study. (AERA paper.) 1972. ERIC: ED 062 138. 13 p.

Morrow, Thomas J. Programmed Mathematics, Des Moines High School. Nov. 1965. ERIC: ED 020 064. 8 p.

Mowbray, John S., Jr. and Seager, G. Bradley, Jr. Sequencing of Instructional Activities. Jan. 1973. ERIC: ED 076 389. 11 p.

Murphy, George M. Arithmetic Anonymous (An Analysis of Computational Mathematical Achievement in Six Towns). Aug. 1968. ERIC: ED 033 769. 27 p.

Nalven, Fredric and Hofmann, Louis J. Final Report of the Evaluation of the 1969-1970 After School Study Centers Program: District Decentralized Project, ESEA Title I. 1970. ERIC: ED 064 429. 49 p.

Nelson, Barbara Ann. Effects of the Analytic-Global and Reflectivity-Impulsivity Cognitive Styles on the Acquisition of Geometry Concepts Presented Through Emphasis or No Emphasis and Discovery or Expository Lessons. (Wisconsin R & D Center report.) Sept. 1972. ERIC: ED 070 679. 155 p.

Nelson, Barbara A. and Frayer, Dorothy A. The Effects on Short- and Long-Term Retention of Discovery and Expository Methods of Presenting Selected Geometry Concepts: A Replication. (Wisconsin R & D Center report.) Feb. 1972. ERIC: ED 065 314. 43 p.

Olson, Alton T. High School Plane Geometry Through Transformations: An Exploratory Study. (OE final report.) Oct. 1969. ERIC: ED 053 986. 71 p.

O'Reilly, Robert P. State Education Department Leadership in Project and Regional Evaluation Systems. Mar. 1970. ERIC: ED 041 053. 44 p.

Otto, Henry J. and others. An Elementary School Evaluation. 1969. ERIC: ED 036 889. 133 p.

Owens, Douglas T. The Effects of Selected Experiences on the Ability of Disadvantaged Kindergarten and First Grade Children to Use Properties of Equivalence and Order Relations. (AERA paper.) Apr. 1972. ERIC: ED 061 096. 29 p.

Owens, Douglas T. and Cooney, Thomas J. The Effects of Selected Experiences on the Ability of EMR Children to Conserve and Use the Transitive Property of Three Matching Relations: A Feasibility Study. (AERA paper.) Apr. 1972. ERIC: ED 061 095. 14 p.

Owens, Douglas T. and Steffe, Leslie P. Differential Performance of Kindergarten Children on Transitivity of Three Matching Relations. Feb. 1971. ERIC: ED 048 942. 26 p.

Pace, Angela. Conservation of Identity and Equivalence Among Children from Varying Socio-Economic Backgrounds. 1972. ERIC: ED 067 265. 19 p.

Paulson, Casper F., Jr. Slow Learners, Competition, and Programed Instruction. Aug. 1964. ERIC: ED 003 204. 52 p.

Payne, Joseph N. The Formation of Addition and Subtraction Concepts by Pupils in Grades One and Two. (Final report.) May 1967. ERIC: ED 015 015. 24 p.

Pella, Milton O. Science and Mathematics Education Research Training Program 1966-1972. (OE final report.) Sept. 1972. ERIC: ED 073 935. 18 p.

Peterson, John C. Effect of an Advanced Organizer, A Post Organizer, or Knowledge of a Behavioral Objective on Achievement and Retention of a Mathematical Concept. Feb. 1971. ERIC: ED 047 955. 20 p.

Phillips, E. Ray and Kane, Robert B. Validating Learning Hierarchies for Sequencing Mathematical Tasks. 1970. ERIC: ED 064 405. 21 p.

Pieronek, Florence T. A Survey of Individualized Reading and Mathematics Programs. 1969. ERIC: ED 047 894. 66 p.

Pikaart, Len and others. Bibliography of Research Studies in Elementary School and Pre-School Mathematics. Jan. 1966. ERIC: ED 023 464. 55 p.

Pinsky, Paul and Gorth, William P. Descriptive Analysis of HS420: Eleventh Grade Algebra, First Semester. July 1969. ERIC: ED 042 794. 22 p.

Prince, Albert I. Conditioning Children for School. (Final report.) Dec. 1967. ERIC: ED 019 802. 45 p.

Proctor, Virginia H. and Wright, E. Muriel J. *Systematic Observation of Verbal Interaction as a Method of Comparing Mathematics Lessons*. June 1961. ERIC: ED 003 827. 380 p.

Quilling, Mary R. and others. *Research and Development Activities in R and I Units of Two Elementary Schools of Milwaukee, Wisconsin, 1966-1967*. (Wisconsin R & D Center report.) Feb. 1968. ERIC: ED 020 911. 23 p.

Raymond, Roger A. *Teaching Algebra to Ninth and Tenth Grade Pupils with the Use of Programmed Materials and Teaching Machines*. Oct. 1963, Oct. 1964. ERIC: ED 023 312. 91 p. ED 023 311. 72 p.

Reisman, Fredricka K. *An Evaluative Study of the Effects of Cognitive Acceleration in Mathematics in the Early School Years*. 1968. ERIC: ED 062 207. 67 p.

Resnick, Lauren B. and others. *A Hierarchially Sequenced Introductory Mathematics Curriculum*. Dec. 1970. ERIC: ED 048 729. 95 p. ED 047 954. 82 p.

Restle, Frank. *A Study of Psychological Patterns in Learning Elementary Mathematics*. 1966. ERIC: ED 010 184. 101 p.

Retzer, Kenneth A. *Effects of Precise Verbalization of Discovered Mathematical Generalizations on Transfer*. Oct. 1969. ERIC: ED 040 849. 61 p.

Richardson, Jesse O. *Teaching Mathematics Through the Use of a Time-Shared Computer*. Mar. 1968. ERIC: ED 023 606. 224 p.

Rising, Gerald R. and Ryan, James J. *Effects of Experimental Programs for Secondary Mathematics on Pupil Interest in Mathematics as Indicated by an Overt Participation Index of Interest*. July 1966. ERIC: ED 011 941. 27 p.

Rising, Gerald R. and Ryan, James J. *Participant Teacher Judgments of Experimental Programs in Secondary Mathematics*. Aug. 1966. ERIC: ED 011 942. 31 p.

Rogers, W. Todd and Hopkins, Kenneth D. *The Effect of Delay of Knowledge of Results on the Acquisition and Retention of Novel Multiplication Facts*. Feb. 1971. ERIC: ED 048 001. 26 p.

Romberg, Thomas A. (editor). *Papers for the Research Reporting Sections of the Forty-Seventh Annual Meeting of the National Council of Teachers of Mathematics*. Apr. 1969. ERIC: ED 029 790. 107 p.

Rosen, Ellen F. and Stolurow, Lawrence M. *In Pursuit of a Simplex in UICSM High School Algebra*. July 1964. ERIC: ED 021 478. 9 p.

Rosenbloom, Paul C. and others. *Characteristics of Mathematics Teachers That Affect Students' Learning*. (Final report.) Sept. 1966. ERIC: ED 021 707. 167 p.

Rosenthal, Daniel J. A. and Resnick, Lauren B. *The Sequence of Information in Arithmetic Word Problems*. (AERA paper.) Feb. 1971. ERIC: ED 049 909. 7 p.

Rudolph, William B. *Measuring Reading Comprehensibility and Difficulty in Mathematical English Using Relative Sequential Constraint*. Feb. 1971. ERIC: ED 052 898.* 21 p.

Rudolph, William B. and Kane, Robert B. *Estimates of the Relative Sequential Constraint for Selected Passages from Mathematics Books and the Relationship of These Measures to Reading Comprehension*. Mar. 1970. ERIC: ED 044 237. 31 p.

Runion, Garth Eugene. *The Development of Selected Initiating Activities in the Teaching of Mathematics*. 1972. ED 067 247. 173 p.

Runyon, Richard P. *Early Identification of the Gifted Through Interage Grouping*. (End-of-year report.) July 1963. ERIC: ED 027 648. 29 p.

Ryan, James J. *Effects of Modern and Conventional Mathematics Curricula on Pupil Attitudes, Interests, and Perception of Proficiency*. July 1967, Aug. 1967, Jan. 1968. ERIC: ED 015 873. 74 p. ED 015 874. 23 p. ED 022 673. 169 p.

Sawyer, Ray C. *Evaluation of Alternative Methods of Teaching Subtraction of Integers in Junior High School.* (OE final report.) Jan. 1973. ERIC: ED 073 944. 170 p.

Scandura, Joseph M. *Extra-Scope Transfer in Learning Mathematical Rules*. (OE final report.) May 1970. ERIC: ED 040 885. 39 p.

Scandura, Joseph M. *Mathematics and Structural Learning*. (Final report.) May 1971. ERIC: ED 054 952. 98 p.

Schafer, Larry E. *The Effectiveness of Cue Fading in Teaching Kindergarten Children to Serial Order*. (NARST paper.) Mar. 1973. ERIC: ED 076 430. 27 p.

Schmalohr, Emil. *Posibilidades y Limites de un Fomento Cognitivo Temprano* (Possibilities and Limits of Early Cognitive Development). 1971. ERIC: ED 064 977. 18 p.

Schultz, Richard E. and others. *Measurement Procedures in Programed Instruction*. Aug. 1964. ERIC: ED 003 617. 195 p.

Shah, Sair Ali. *Selected Topological Concepts Taught to Children, Ages Six to Nine*. Feb. 1971. ERIC: ED 049 061. 7 p.

Shaw, Judith A. *Reading Problems in Mathematics Texts*. Aug. 1967. ERIC: ED 016 587. 19 p.

Shepler, Jack L. *A Study of Parts of the Development of a Unit in Probability and Statistics for the Elementary School*. (Wisconsin R & D Center report.) Nov. 1969. ERIC: ED 038 302. 146 p. ED 038 303. 153 p. ED 038 304. 98 p. ED 038 305. 60 p.

Shepler, Jack L. *An Exploratory Study of the Interaction of Three Elementary Concepts of Probability with Stimuli, Socioeconomic, Grade, and IQ Differences*. (Wisconsin R & D Center report.) Mar. 1970. ERIC: ED 045 414. 46 p.

Sherrill, James M. *The Effects of Differing Presentation of Mathematical Word Problems upon the Achievement of Tenth Grade Students*. July 1970. ERIC: ED 040 859. 25 p.

Shulte, Albert P. *The Oakland County Mathematics Project*. (OE report.) 1971. ERIC: ED 047 987. 5 p.

Shumway, Richard J. *Negative Instances and the Acquisition of the Mathematical Concepts of Commutativity and Associativity*. (OE final report.) June 1972. ERIC: ED 072 979. 98 p.

Shumway, Richard J. *Positive Versus Positive and Negative Instances and the Acquisition of the Conjunctive Concepts of Distributivity and Homomorphism*. (AERA paper.) 1973. ERIC: ED 075 194. 21 p.

Silberman, Harry and others. Development and Evaluation of Self-Instructional Materials for Underachieving and Overachieving Students. July 1962. ERIC: ED 003 177. 121 p.

Silberman, H. and others. *Use of Exploratory Research and Individual Tutoring Techniques for the Development of Programing Methods and Theory*. (Final report.) June 1964. ERIC: ED 003 210. 62 p.

Sjogren, Douglas D. *Programmed Materials in High School Correspondence Courses*. 1964. ERIC: ED 003 282. 85 p.

Skager, Rodney W. *Student Entry Skills and the Evaluation of Instructional Programs: A Case Study.* Feb. 1969. ERIC: ED 029 364. 17 p.

Small, Dwain E. and others. *The Problems of Under Achievement and Low Achievement in Mathematics Education.* Nov. 1966. ERIC: ED 010 535. 88 p.

Smith, Calvin M., Jr. *An Exploratory Study of the Effects of Compensatory Education on the Reading and Mathematics Achievement of Intermediate Grade Pupils.* (AERA paper.) 1972. ERIC: ED 065 602. 90 p.

Smith, Dorothy Gaston. *Psychological Correlates of Reading Deficiency: Etiological and Normative Comparisons.* (Conference paper.) Mar. 1969. ERIC: ED 035 510. 17 p.

Smith, G. A. *Evaluation of the Chiduku Literacy Project: An Abridged Report: A Micro-Study of Rural Illiteracy in the Tribal Trust Lands of Rhodesia.* July 1970. ERIC: ED 042 094. 33 p.

Smith, Gerald Eugene. *Relationships Between Cognitive Style and Instructional Treatment Among Prospective Elementary School Teachers.* (AERA paper.) Feb. 1973. ERIC: ED 075 196. 5 p.

Smith, Ian D. and Hess, Robert D. *The Effects of Computer-Assisted Instruction on Student Self-Concept, Locus of Control, and Level of Aspiration.* May 1972. ERIC: ED 062 832. 25 p.

Smock, Charles D. and Belovicz, Gretchen. *Understanding of Concepts of Probability Theory by Junior High School Children.* Feb. 1968. ERIC: ED 020 147. 61 p.

Sowder, Larry. *Verbalizing Method Influence on Short-Term Retention of Discovered Generalizations.* 1972. ERIC: ED 062 141. 5 p.

Sowder, Larry K. and others. *Advance Organizers and Objectives in Teaching Mathematics.* (AERA paper.) 1973. ERIC: ED 075 193. 17 p.

Spencer, Rosemary Y. and Briggs, Leslie J. *Application of a Learning Hierarchy to Sequence an Instructional Program, and Comparison of This Program with Reverse and Random Sequences.* (Final report.) Feb. 1972. ERIC: ED 063 807. 151 p.

Staats, Arthur W. and others. *Learning and Cognitive Development: Representative Samples (Reading, Number Concepts, Writing) and Experimental Longitudinal Methods.* (Final report.) Oct. 1969. ERIC: ED 042 183. 184 p.

Stafford, Richard E. *Hereditary and Environmental Components of Quantitative Reasoning.* (AERA paper.) Feb. 1971. ERIC: ED 049 046. 22 p.

Steele, Joe Milan and House, Ernest R. *Curriculum Structure as Reflected in Perceived Cognitive and Affective Processes.* Apr. 1972. ERIC: ED 060 566. 22 p.

Steere, Bob F. *An Evaluation of a Nongraded Secondary School.* (Final report.) Dec. 1967. ERIC: ED 018 003. 145 p.

Steffe, Leslie P. *The Effects of Two Variables on the Problem-Solving Abilities of First-Grade Children.* (Wisconsin R & D Center report.) Mar. 1967. ERIC: ED 019 113. 23 p.

Steffe, Leslie P. *Classificational Abilities of Young Children.* (AERA paper.) 1972. ERIC: ED 062 201. 29 p.

Steffe, Leslie P. and Carey, Russell L. *An Investigation in the Learning of Relational Properties by Kindergarten Children.* (AERA paper.) 1972. ERIC: ED 062 137. 31 p.

Steffe, Leslie and Van Engen, Henry. *First Grade Children's Concept of Addition of Natural Numbers.* (Wisconsin R & D Center report.) 1966. ERIC: ED 010 508. 22 p.

Stever, H. Guyford. *National Science Foundation Annual Report 1972.* 1973. ERIC: ED 075 262. 113 p.

Street, W. Paul (editor). *Computerized Instruction in Mathematics Versus Other Methods of Mathematics Instruction under ESEA Title I Programs in Kentucky.* June 1972. ERIC: ED 068 354. 59 p.

Suppes, Patrick. *Mathematical Models of Elementary Mathematics Learning and Performance.* (OE final report.) Feb. 1973. ERIC: ED 075 264. 30 p.

Sutton, Joseph T. *Individualizing Junior High School Mathematics Instruction.* (Final report.) Aug. 1967. ERIC: ED 016 609. 62 p.

Suydam, Marilyn N. *Compilation of Research Results in Elementary Arithmetic Since 1900.* (OE final report.) Aug. 1967. ERIC: ED 013 227. 76 p.

Suydam, Marilyn N. *Interpretive Study of Research and Development in Elementary School Mathematics: Phase 2.* (OE final report.) Aug. 1970. ERIC: ED 043 508. 179 p.

Suydam, Marilyn N. *Research in Elementary School Mathematics-1970: Annotated List of Research References.* (ERIC/SMEAC Mathematics Education Report.) Apr. 1971. ERIC: ED 049 079. 50 p.

Suydam, Marilyn N. *Teaching Mathematics to Disadvantaged Pupils: A Summary of Research.* (ERIC/SMEAC Mathematics Education Report.) Apr. 1971. ERIC: ED 049 934. 68 p.

Suydam, Marilyn N. *Annotated Compilation of Research on Secondary School Mathematics, 1930-1970.* (OE final report.) Feb. 1972. *Volume 1: Introduction, Compilation of Articles.* ERIC: ED 062 165. 407 p. *Volume 2: Compilation of Dissertations, Summary and Conclusions.* ERIC: ED 062 166. 411 p.

Suydam, Marilyn N. *Research on Mathematics Education (K-12) Reported in 1971.* (ERIC/SMEAC Mathematics Education Report.) Mar. 1972. ERIC: ED 064 126. 87 p.

Suydam, Marilyn N. *A Review of Research on Secondary School Mathematics.* (ERIC/SMEAC Mathematics Education Report.) Mar. 1972. ERIC: ED 065 313. 227 p.

Suydam, Marilyn N. and Riedesel, C. Alan. *Interpretive Study of Research and Development in Elementary School Mathematics, Phase 1.* (OE final report.) June 1969. *Volume 1: Introduction and Summary: What Research Says.* ERIC: ED 030 016. 255 p. *Volume 2: Compilation of Research Reports.* ERIC: ED 030 017. 331 p. *Volume 3: Developmental Projects.* ERIC: ED 030 018. 232 p.

Suydam, Marilyn N. and Riedesel, C. Alan. *Research on Elementary Mathematics: PREP-11.* (OE report.) 1970. ERIC: ED 034 087. 62 p.

Suydam, Marilyn N. and Weaver, J. Fred. *Using Research: A Key to Elementary School Mathematics.* (OE project bulletins.) 1970.
A-1: *Attitudes and Interests.* ERIC: ED 038 283. 8 p.
A-2: *Planning for Instruction.* ERIC: ED 038 290. 8 p.
A-3: *The Teaching-Learning Process.* ERIC: ED 038 323. 8 p.
A-4: *Individualizing Instruction.* ERIC: ED 038 318. 8 p.
A-5: *Instructional Materials and Media.* ERIC: ED 040 055. 8 p.
A-6: *Planning for Research in Schools.* ERIC: ED 040 855. 8 p.
B-1: *Addition and Subtraction with Whole Numbers.* ERIC: ED 037 348. 12 p.
B-2: *Multiplication and Division with Whole Numbers.* ERIC: ED 038 291. 12 p.
B-3: *Rational Numbers: Fractions and Decimals.* ERIC: ED 038 317. 8 p.
B-4: *Other Mathematical Topics.* ERIC: ED 047 931. 8 p.
B-5: *Verbal Problem Solving.* ERIC: ED 047 932. 8 p.

Suydam, Marilyn N. and Weaver, J. Fred. *The Research from 1970: What Did It Add?* (ERIC/SMEAC bulletin.) Feb. 1971. ERIC: ED 049 078. 8 p.

Suydam, Marilyn N. and Weaver, J. Fred. *Mathematics and the "Disadvantaged"*. (ERIC/SMEAC bulletin.) Mar. 1971. ERIC: ED 051 001. 8 p.

Suydam, Marilyn N. and Weaver, J. Fred. *Research on Mathematics Education (K-12) Reported in 1972*. (ERIC/SMEAC Mathematics Education Report.) Apr. 1973. ERIC: ED 076 437. 80 p.

Tanaka, Masako N. and Chittenden, Edward A. *Understanding of Quantitative Concepts in 3-1/2 to 4-1/2 Year-Old Children*. Mar. 1970. ERIC: ED 046 491. 9 p.

Taranto, Maria and Mermelstein, Egon. *A Study of Number Conservation with Tasks Which Vary in Length, Area and Volume*. (OE final report.) June 1972. ERIC: ED 064 147. 56 p.

Tatsuoka, Maurice M. and Comley, Robert E. *UICSM Research Report Number 4: Some Comparisons of Mathematics Achievement in UICSM and Non-UICSM Classes in Inglewood, California*. Dec. 1964. ERIC: ED 040 044. 10 p.

Taylor, Susan S. and others. *A Comparison of Two Public School Computer-Assisted Instruction Projects*. Apr. 1972. ERIC: ED 064 400. 25 p.

Thoyre, Henry Howard. *A Pilot Study on the Use of Small-Group Discussion in a Mathematics Course for Preservice Elementary School Teachers*. (OE final report.) May 1970. ERIC: ED 054 934. 170 p.

Tiemens, Robert K. *The Comparative Effectiveness of Sound Motion Pictures and Printed Communications for the Motivation of High School Students in Mathematics*. 1962. ERIC: ED 003 573. 77 p.

Tocco, Thomas S. *Student Attitudes, Perceived Parental Attitudes, and Socio-Economic Status as Predictors of Junior High School Mathematics Achievement*. Apr. 1971. ERIC: ED 052 017. 31 p.

Torrance, E. Paul and others. *Characteristics of Mathematics Teachers That Affect Students' Learning*. 1966. ERIC: ED 010 378. 169 p.

Torrance, E. Paul. *A Three-Year Study of the Influence of a Creative-Aesthetic Approach to School Readiness and Beginning Reading and Arithmetic on Creative Development*. (OE report.) Sept. 1969. ERIC: ED 041 419. 20 p.

Travers, Kenneth J. and Knifong, J. Dan. Mathematics Student teachers' Self-Assessment of Teaching Competencies. Apr. 1971. ERIC: ED 049 055. 18 p.

Travers, Kenneth J.; Heath, Robert W.; and Cahen, Leonard S. *Preferences for Modes of Expression in Mathematics.* May 1967. ERIC: ED 050 962. 25 p.

Trent, John H. and others. *Effectiveness of University of Illinois Committee on School Mathematics (UICSM) Stretchers and Shrinkers and Motion Geometry Materials in Improving Arithmetic Ability.* 1972. ERIC: ED 062 197. 10 p.

Unkel, Esther R. *A Study of the Laboratory Approach and Guided Discovery in the Teaching Learning of Mathematics by Children and Prospective Teachers.* Sept. 1971. ERIC: ED 056 986. 15 p.

Van de Walle, John A. *Attitudes and Perceptions of Elementary Mathematics Possessed by Third and Sixth Grade Teachers as Related to Student Attitude and Achievement in Mathematics.* (NCTM paper.) Apr. 1973. ERIC: ED 076 425. 12 p.

Van Horn, Charles. *A Comparison Between Two Kinds of Secondary Mathematics Courses with Respect to Intellectual Changes.* Oct. 1966. ERIC: ED 011 059. 69 p.

Van Wagenen, R. Keith and Zellner, Ronald D. *The Child's Introduction to Mathematics: A Transfer Model Based in Measurement.* (AERA paper.) Apr. 1972. ERIC: ED 061 097. 20 p.

Walbesser, Henry H. and Eisenberg, Theodore A. *A Review of Research on Behavioral Objectives and Learning Hierarchies.* (ERIC/SMEAC Mathematics Education Report.) Jan. 1972. ERIC: ED 059 900. 82 p.

Wang, Margaret C. and others. *PEP in the Frick Elementary School: Interim Evaluation Report of the Primary Education Project, 1968-1969.* 1970. ERIC: ED 047 973. 48 p.

Watson, Carlos and others. *A Study of the Required Mathematics Content Courses for Undergraduate Elementary Teachers in the United States.* 1973. ERIC: ED 073 917. 8 p.

Weaver, J. Fred and Suydam, Marilyn N. *Meaningful Instruction in Mathematics Education.* (ERIC/SMEAC Mathematics Education Report.) June 1972. ERIC: ED 068 329. 73 p.

Weaver, J. F. and others. *Some Factors Associated with Pupils' Performance on Examples Involving Selected Variations of the Distributive Idea.* (AERA paper.) 1973. ERIC: ED 075 199. 50 p.

Webb, Leland F. Interaction Effects Between Selected Cognitive Abilities and Instructional Treatment in Algebra: An ATI Study. (AERA paper.) Apr. 1972. ERIC: ED 064 127. 21 p.

Weinstein, Melissa Starbuck. Effects of Training on the Concepts of Water Level and Horizontality in the Classroom. (Wisconsin R & D Center report.) May 1970. ERIC: ED 056 882. 92 p.

Wheatley, Grayson H. The Development of a Group Film Test of Certain Piagetian Conservations. Apr. 1972. ERIC: ED 064 315. 17 p.

Wiles, Clyde A.; Romberg, Thomas A.; and Moser, James M. The Relative Effectiveness of Two Different Instructional Sequences Designed to Teach the Addition and Subtraction Algorithms. (Wisconsin R & D Center report 222.) Mar. 1972. ERIC: ED 062 195. 66 p. Also ED 070 663. 54 p.

Williams, S. Irene and Jones, Chancey O. A Comparison of Interview and Normative Analysis of Mathematics Questions. Apr. 1972. ERIC: ED 067 397. 49 p.

Williford, Harold J. A Study of Transformational Geometry Instruction in the Primary Grades. Feb. 1971. ERIC: ED 047 961. 22 p.

Wiviott, Suzanne Pasch. Bases of Classification of Geometric Concepts Used by Children of Varying Characteristics. 1970. ERIC: ED 046 049. 115 p. ED 046 050. 44 p.

Wolf, Montrose M. and others. Experiments with Token Reinforcement in a Remedial Classroom. 1966. ERIC: ED 012 284. 26 p.

Wooldridge, Ralph L. Motivation-Hygiene Orientation and School Achievement in Mentally Subnormal Children. June 1966. ERIC: ED 028 573. 73 p.

Young, Beverly S. Inducing Conservation of Number, Weight, Volume, Area and Mass in Disadvantaged Pre-School Children: A Mathematics Readiness. (Final report.) Dec. 1970. ERIC: ED 060 154. 101 p.

Evaluation--Plus, 1966-1967. Sept. 1967. ERIC: ED 016 733. 27 p.

Curriculum and Teaching of Mathematics in the Higher Secondary Schools--An Analysis of Syllabuses. 1967. ERIC: ED 023 584. 262 p.

Programmed Mathematics, Dora High School. Nov. 1965. ERIC: ED 026 184. 7 p.

After-School Study Centers, New York City: Elementary Program in Compensatory Education 2. 1969. ERIC: ED 027 362. 18 p.

The Juniper Gardens Children's Project. (OEO final report.) Aug. 1968. ERIC: ED 027 947. 31 p.

Junior High Summer Institutes, New York City: It Works. 1969. ERIC: ED 028 898. 19 p.

General Secondary School Curriculum in the Asian Region. (UNESCO bulletin.) Mar. 1969. ERIC: ED 029 742.

Learning Laboratory to Teach Basic Skills in a Culturally Deprived Area. (final report.) July 1968. ERIC: ED 033 186. 33 p.

After School Centers Project. (Final reports.) 1969. ERIC: ED 034 013. 53 p.

Stanford Center for Research and Development in Teaching: Fourth Annual Report. Aug. 1969. ERIC: ED 034 306. 76 p.

Research Reporting Sections: National Council of Teachers of Mathematics Golden Jubilee Year, 48th Annual Meeting. (ERIC/SMEAC Report.) Mar. 1970. ERIC: ED 036 670. 69 p.

Afternoon Remedial and Enrichment Program, Buffalo, New York: Elementary Program in Compensatory Education Education 2. 1969. ERIC: ED 038 468. 13 p.

Plus Program, Buffalo, New York: Elementary Program in Compensatory Education 2. 1969. ERIC: ED 038 474. 19 p.

Teacher Planning + Laboratory Setting = An Innovative Project. Sept. 1969. ERIC: ED 049 045. 4 p.

Project SOSO (Save Our Slow Ones). 1970. ERIC: ED 049 062. 6 p.

Research Reporting Sections, National Council of Teachers of Mathematics Annual Meeting (49th, Anaheim, California, April 14-17, 1971). (ERIC/SMEAC Report.) Apr. 1971. ERIC: ED 049 920. 68 p.

Nursery School Project. May 1971. ERIC: ED 057 908. 31 p.

Proceedings of the Annual State Conference on Educational Research "Accountability and the Curriculum". Nov. 1971. ERIC: ED 062 382. 119 p.

A Demonstration of Incentives in Education. (OEO report.) Feb. 1972. ERIC: ED 064 781. 17 p.

An Experiment in Performance Contracting. (OEO report.) June 1972. ERIC: ED 064 782. 236 p.

Enrollment Increase in Science and Mathematics in Public Secondary Schools, 1948-49 to 1969-70. (NSF report.) Oct. 1971. ERIC: ED 067 263. 4 p.

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This index is designed to help the user locate references to designated mathematical topics. It should be noted that the cross-referencing is not exhaustive: there may be other references which could be pertinent, but have been omitted due to oversight.

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The letter E indicates that the research was conducted at the elementary-school level (K-6); S indicates secondary-school level (7-12). (E/S indicates a study in which the sample was at both levels; e.g., grades 5-8.) In each case, the references have been grouped by elementary article, secondary article, elementary dissertation, secondary dissertation, and ERIC document.

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1	S	Higgins, 1970
1	S	Kinkerman and Bridges, 1967
1	S	Lackner, 1971
1	S	Lackner, 1972
1	S	Lucas, 1967
1	S	Meconi, 1967
5	S	Meconi, 1967
1	S	Price, 1967
1	S	Retzer and Henderson, 1967
1	S	Scandura, Barksdale, Durnin, and McGee, 1969
5	S	Tanner, 1969
5	S	Vance and Kieren, 1971
1	S	Vance and Kieren, 1972
1	S	Wright, 1970
1	S	Zahn, 1966
2	E	Archibald, 1968
2	E	Armstrong, J. R., 1968
2	E	Barrish, 1971
2	E/S	Baughman, 1968
2	E	Bernard, 1973
2	E	Bidwell, C. G., 1969
2	E	Borgen, 1971
2	E	Bronder, 1973
2	E	Brown, C. K., 1973
2	E/S	Bruni, 1968
2	E	Budgy, 1969
2	E	Clausen, 1972
2	E	Cobb, 1970
2	E	Crowder, R. P., 1970
2	E	Curry, 1971
2	E	Drachenberg, 1968
2	E	Fallon, 1973
2	E	Fisher, J. R., 1968
4	E	Fitzgerald, 1972
2	E	Gardner, H. F., 1970
2	E	Gaskill, E. A., 1971
2	E	Gibish, 1971
2	E	Godde, 1973
2	E	Grafft, 1966
2	E	Gray, T. M., 1973
2	E	Greathouse, 1966
2	E	Guerriero, 1972
2	E	Hamby, 1972
2	E	Hampton, H. F., 1968
2	E	Harmon, 1970
2	E	Harper, K. J., 1973
2	E	Heiman, 1971
2	E	Higdon, G. H., 1973
2	E	Howard, V. G., 1970
2	E	Jones, R. C., 1972
2	E	Juliar, 1969

Teaching approaches (cont.)

2	E	Kanes, 1971
2	E	Kissel, 1971
2	E	Knaupp, 1971
2	E	Kratzer, 1972
2	E/S	Krause, 1969
2	E/S	Labaki, 1973
2	E	Lanier, 1967
2	E	Lindgren, 1968
2	E/S	Martin, J. M., 1971
4	E	McLaughlin, J. A., 1973
2	E	McLeod, G. K., 1971
2	E	Mehl, J. W., 1973
2	E	Meyer, 1970
2	E	Montgomery, M. E., 1973
2	E	Nichols, E. J., 1972
2	E	Niederkorn, 1971
2	E/S	Nixon, 1971
2	E/S	Norland, 1971
2	E	Nowak, B. A., 1972
2	E	Pate, 1964
2	E/S	Phelps, 1964
2	E	Possien, 1965
4	E	Postman, 1971
2	E	Putoff, 1973
2	E	Rathmell, 1973
2	E	Robertson, 1971
2	E/S	Rollins, T. J., 1973
2	E	Ropes, 1973
2	E	Schloff, 1973
4	E	Sheofee, 1971
2	E	Silbaugh, 1972
2	E/S	Simmons, S. V., 1966
2	E	Tack, 1972
2	E	Thompson, J. W., 1969
2	E	Tryon, 1968
2	E	Wheeler, O. V., 1972
2	E	Wilkinson, J. D., 1971
2	E	Williams, L. L., 1973
2	E/S	Woodall, 1967
2	S	Ball, 1973
2	S	Ballew, 1966
2	S	Barcaski, 1970
2	S	Becker, 1967
2	S	Brown, L. H., 1970
2	S	Bull, S. S., 1971
2	S	Carlow, 1968
2	S	Carry, 1968
2	S	Cech, 1970
2	S	Clark, V. D., 1966
2	S	Cohen, M. S., 1971
2	S	Crangle, 1971
2	S	Cronin, R. E., 1968
2	S	Davidson, W. W., 1969
2	S	Davis, J. B., 1968
2	S	Denmark, 1965
2	S	Dittmer, 1972
2	S	Dorminey, 1973
2	S	Eastman, 1973
2	S	Ebeid, 1964
2	S	Eldredge, 1966
2	S	Fejfar, 1964
2	S	Fernandez, 1972
2	S	Finnell, 1973
2	S	Fisher, M. E., 1973
2	S	Fremont, 1964
2	S	Friebel, 1965
2	S	Gawronski, 1971
2	S	Hammons, 1972
2	S	Hanneman, 1972
2	S	Hanson, R. B., 1967
2	S	Hirsch, 1973
2	S	Horne, 1967
2	S	Houston, 1969
2	S	Howitz, 1966
2	S	Hutcheson, 1973
2	S	Jeffrey, 1972
2	S	Johnson, D. C., 1966
2	S	Johnson, R. E., 1971
2	S	Joseph, 1964
2	S	Keese, 1972
2	S	Kepner, 1971
2	S	Kleckner, 1969
2	S	Kuhfittig, 1972
2	S	Lackner, 1969
2	S	Malcom, 1973
2	S	Maricle, 1970
2	S	Maynard, 1970
2	S	McClure, C. W., 1972
2	S	McDaniel, R., 1973
2	S	McGannon, 1971
2	S	McLaughlin, J. P., 1970
2	S	Mwaniki, 1973
2	S	Nelson, B. A., 1973
2	S	Neuhouser, 1965
2	S	Noto, 1972
2	S	Page, 1971
2	S	Palzere, 1968
2	S	Patterson, 1970

Teaching approaches (cont.)

2	S	Paul, 1973
2	S	Payne, H. I., 1965
2	S	Peterson, J. M., 1967
2	S	Price, 1966
2	S	Raba, 1973
2	S	Ritter, 1971
2	S	Robinson, G. E., 1964
2	S	Rollins, J. H., 1966
2	S	Roughead, 1967
2	S	Schaefer, W. A., 1972
2	S	Schippert, 1965
2	S	Sederberg, 1964
2	S	Shumaker, 1973
2	S	Silbaugh, 1972
2	S	Simmons, 1966
2	S	Sipser, 1966
2	S	Snyder, 1967
2	S	Strickland, 1969
2	S	Taylor, L. M., 1972
2	S	Tener, 1969
2	S	Tidwell, 1972
2	S	Vermaelen, 1973
2	S	Volchansky, 1969
2	S	Wheaton, 1972
2	S	Whipple, 1972
2	S	White, V. T., 1972
2	S	Wilson, J. W., 1968
4	S	Wolfe, R. E., 1969
2	S	Wood, S. W., 1973
2	S	Wright, R. E., 1965
2	S	Yasui, 1968
2	S	Yawin, 1973
2	S	Zahn, 1966
6	S	Archer amd Woodlen, 1967
6	S	Austin, 1969
6	S	Crosby et al., 1960
6	E	Deep, 1966
6	E/S	Della-Piana et al., 1965
6	E	Dunlap et al., 1971
6	S	Ericksen and Ryan, 1966
6	S	Fitzgerald, 1965
6	E/S	Fitzgerald, 1972
6	S	Gibbs and Brgoch, 1964
6	S	Higgins, 1969
6	E	Hollis, 1972
6	E	Jourdane, 1970
6	S	Lackner, 1968
6	S	Malinen, 1969
6	S	Maynard and Strickland, 1969
6	E	Meade and Griffin, 1969
6	E	Nelson, 1972
6	S	Nelson and Frayer, 1972
6	S	Paulson, 1964
6	E	Pieronek, 1969
6	S	Retzer, 1969
6	S	Rising and Ryan, 1966
6	S	Skager, 1969
6	S	Sutton, 1967
6	E	Unkel, 1971
6	E/S	Weaver and Suydam, 1972
6	S	ED 049 045, 1969

Drill and practice

1	E	Pigge, 1966
1	E	Pigge, 1967
1	E	Rea and Franch, 1972
1	E	Scott and Lighthall, 1967
1	E	Stovall, 1969
1	E	Suppes, Jerman, and Groen, 1966
1	S	Bassler, Curry, Hall and Mealy, 1971
1	S	Crawford, 1970
1	S	Zahn, 1966
2	E/S	Aims, 1971
2	E/S	Barnes, O. D., 1971
2	E	Brandt, 1973
2	E	Buechele, 1972
2	E	Carr, D. H., 1971
2	E	Carruth, 1971
2	E	Davies, 1972
2	E	Frumes, 1973
2	E	Hirschi, 1971
2	E	Hopkins, C. D., 1966
2	E	Nagel, 1970
2	E	Sandefur, 1966
2	E	Taylor, R. C., 1969
2	S	Brod, 1972
2	S	Camp, J. S., 1973
2	S	Carlow, 1968
2	S	Laing, 1971

Drill and practice (cont.)

2	S	Shaw, 1968
2	S	Sumagaysay, 1972

6	E	Miller and Hess, 1972

Problem solving

1	E	Balow, 1964
1	E	Burns and Yonally, 1964
1	E	Coulter, 1965
1	E	Goodstein et al., 1971
1	E/S	Hudgins and Smith, 1966
1	E	Irish, 1964
1	E	Jerman, 1973
1	E	Johnson et al., 1969
1	E/S	Kilpatrick, 1969
1	E	Klausmeier, 1964
1	E	Koch, 1965
1	E	Lerch and Hamilton, 1966
1	E	Lindgren et al., 1964
1	E	Lyda and Church, 1964
1	E	Lyda and Duncan, 1967
1	E	Moody, Abell, and Bausell, 1971
1	E	Riedesel, 1964
5	E	Riedesel, 1969
1	E	Rimoldi et al., 1968
1	E	Scandura, 1964
1	E	Smith, 1971
1	E	Steffe, 1968
1	E	Steffe and Johnson, 1971
1	E	Stern, 1967
1	E	Stern and Keislar, 1967
1	E	Traub, 1966
1	E	VanderLinde, 1964
1	E	Williams and McCreight, 1965
1	E	Wilson, 1967

1	S	Brown, 1964
1	S	Call and Wiggin, 1966
1	S	Kennedy, Eliot, and Krulee, 1970
1	S	Kulm, 1973
1	S	Meconi, 1967
1	S	Sherrill, 1973
1	S	Travers, 1967

2	E	Ammon, 1973
2	E	Arnold, W. R., 1969
2	E/S	Baughman, 1968
2	E	Bessant, 1972
2	E	Bolduc, 1970
2	E	Boyden, 1970
2	E	Ciklamini, 1969
2	E	Cromer, 1971
2	E	Dembo, 1969
2	E	Dweck, 1972
2	E	Early, J. F., 1968
4	E	Estes, 1971
2	E	Fisher, N. C., 1973
2	E	Flaherty, 1973
2	E	Geisert, 1972
5	E	Gorman, 1968
2	E	Gray, C. A., 1971
2	E	Garmon, 1970
2	E	Heine, 1972
2	E	Henney, 1969
2	E	James, J. B., 1967
4	E	James, J. A. C., 1973
2	E	Jerman, 1972
2	E	Kamins, 1971
2	E	Keil, 1965
2	E	Lamanna, 1969
2	E/S	Lester, 1973
2	E	Linville, 1970
2	E	Loftus, 1971
2	E	Logiudice, 1970
2	E/S	Martin, M. D., 1964
2	E	Nabors, 1968
2	E	Neil, 1969
2	E	Nickel, 1971
2	E/S	O'Flaherty, 1971
4	E	Ouellette, 1973
2	E	Penner, W. J., 1973
2	E	Pennington, 1970
2	E	Portis, 1973
2	E	Possien, 1965
2	E	Robe, 1967
2	E	Robinson, M. L., 1973
2	E	Ropes, 1973
2	E	Sanders, V. A., 1973
2	E	Stuart, 1967
2	E	Stull, 1965
2	E	Swart, 1970
2	E	Talton, 1973
2	E	Thompson, E. N., 1968

Problem solving (cont.)

2	E/S	Treffinger, 1969
2	E	Vitello, 1972
2	E	Walek, 1973
2	E	Williams, A. W., 1973
2	E	Wills, 1967
2	E	Wright, J. P., 1968
2	E	Yens, 1973
2	S	Bechtold, 1965
2	S	Biegen, 1972
2	S	Boersig, 1973
2	S	Denmark, 1965
2	S	Dodson, 1971
2	S	Donahue, 1969
2	S	Foster, T. E., 1973
2	S	Fuller, 1972
2	S	Kilpatrick, 1968
2	S	Koopman, 1964
4	S	Lipson, 1972
2	S	Newstat, 1973
2	S	Palzere, 1968
2	S	Post, 1968
2	S	Sekyra, 1969
2	S	Sherrill, 1971
2	S	Shoecraft, 1972
2	S	Sumagaysay, 1972
2	S	Travers, 1966
2	S	Vox, 1973
2	S	Wilson, J. W., 1968
6	S	Bassler et al., 1972
6	E/S	Beardslee, 1973
6	E	Bright, 1973
6	E	Cawley and Goodman, 1967
6	S	Cook, 1973
6	E	Jerman, 1971
6	E	Jerman, 1972
6	S	Kulm, 1972
6	E	Rosenthal and Resnick, 1971
6	S	Sherrill, 1970

Estimation

2	E	Harris, V. W., 1973
2	E	Ibe, 1973
2	E	Nelson, N. Z., 1967
2	E	Walek, 1973
2	S	Paull, 1972

Mental computation

1	E	Lyda and Church, 1964
1	E	Rea and French, 1972
1	E	Schall, 1973
1	S	Austin, 1970
2	E/S	Bailey, J. M., 1973
2	E	Dansereau, 1969
2	E	Grumbling, 1971
2	E	Payne, J. F., 1966
2	E	Schall, 1970
2	E	Wilson, J. W., 1965
6	E	Gay, 1971

Homework and supervised study

1	E	Gray and Allison, 1971
1	E	Koch, 1965
1	E	Maertens, 1968
1	E	Maertens, 1969
1	E	Maertens and Johnston, 1972
5	E	Riedesel, 1971
1	S	Brown, 1966
1	S	Small, Holtan, and Davis, 1967
2	E	Bradley, R. M., 1968
2	E	Doane, 1973
2	E	Geoghagan, 1971
2	E	Grant, 1971
2	E	Maertens, 1968
2	E	Singh, 1970
2	E	Whelan, 1966

Homework and supervised study (cont.)

2	S	Brinke, 1967
2	S	Gould, 1971
2	E/S	Hudson, 1965
2	S	Laing, 1971
2	S	Lash, 1971
2	S	Peterson, J. C., 1970
4	S	Strickmeier, 1971
2	S	Taylor, H. D., 1972
2	S	Tupesis, 1973
2	S	Urwiller, 1971

6	E	Buchanan et al., 1969

Review

1	E	Bausell and Moody, 1972

1	S	Gay, 1972
1	S	Gay, 1973

2	E	Currey, 1966
2	E	DeLucia, 1973

2	S	Dean, 1968
2	S	Gay, 1971

Writing and reading numerals

2	E	Buchanan, 1967

Specification of objectives

1	E	Beardslee, Gau, and Heimer, 1973
3	E	Elsner, 1973
1	E	Farris, 1973
1	E	Henderson, 1968
1	E	Hirschbuhl, 1973
1	E	Hopkins, 1973
1	E	Klein, 1973
1	E	Marksberry, McCarter, and Noyce, 1969
1	E	Sawada, 1973

1	S	Baker, 1971
1	S	Baker, 1972
1	S	Bierden, 1970
1	S	Bowers, 1973
1	S	Campbell, 1964
3	S	Hosford, 1973
1	S	Peterson, 1973
1	S	Werner, 1970

2	E	Arrants, 1973
2	E	Atwood, 1971
4	E	Bazik, 1973
4	E	Beamer, J. E., 1971
2	E/S	Benner, 1971
2	E	Boozer, 1971
2	E	Clover, 1972
4	E	Cook, J. M., 1970
4	E	Eisenberg, 1971
4	E	Elsner, 1973
2	E	Farris, 1971
2	E	Ferre, 1972
4	E	Heintz, 1971
2	E	Hirschbuhl, 1972
2	E	Hopkins, L. V., 1972
2	E/S	Hynes, 1971
2	E	Klein, P. A., 1971
4	E	McBride, 1971
4	E	McKeen, 1971
2	E	Moncrief, 1973
2	E	Moore, T. R., 1972
2	E	Nelson, R. S. R., 1973
2	E	Sawada, 1972
2	E	Troutman, 1972
4	E	Woods, M. C., 1971

2	S	Bierden, 1969
4	S	Boliver, 1972
2	S	Bowers, 1972
2	S	Chandler, R. L., 1972
2	S	Collins, K. M., 1971
2	S	Fisher, M. E., 1973
2	S	Harding, 1969
2	S	Herceg, 1973
2	S	Lasswell, 1971
2	S	Loh, 1972
2	S	McCullough, 1971
2	S	Mortlock, 1970
2	S	Piatt, 1970
2	S	Proctor, 1968
2	S	Rafiq, 1965
4	S	Smith, E. P., 1970
2	S	Werner, 1969

Specification of objectives (cont.)

6	E	Peterson, 1971
6	S	Skager, 1969
6	E/S	Walbesser and Eisenberg, 1972

Attitudes, self-concept, and climate

1	E	Abrego, 1966
3	E	Adams and Van Brock, 1967
5	E/S	Aiken, 1970a
5	E/S	Aiken, 1970b
5	E/S	Aiken, 1972
1	E/S	Anttonen, 1969
1	E	Bassham, Murphy, and Murphy, 1964
1	E	Capps and Cox, 1969
1	E	Clifford and Cleary, 1972
1	E	Dill and Gotts, 1971
1	E/S	Dutton and Blum, 1968
1	E	Hendrickson, 1969
1	E	Hudgins and Loftus, 1966
1	E	Inskeep and Rowland, 1965
5	E	Knaupp, 1973
1	E	Levine, 1972
5	E/S	Neale, 1969
1	E	Neale and Proshek, 1967
1	E	Neale, Gill, and Tismer, 1970
1	E	Peper and Chansky, 1970
1	E	Saxe, 1971
1	E	Scharf, 1971
1	E/S	Schultz, 1972
1	E	Shepps and Shepps, 1971
1	E/S	Thomas and Yamamoto, 1971
1	E/S	Yamamoto, Thomas, and Karns, 1969

1	S	Aiken, 1972
1	S	Anderson, 1971
1	S	Anderson and Johnson, 1971
1	S	Bachman, 1970
1	S	Bledsoe, Brown, and Strickland, 1971
1	S	Broussard, Fields, and Reusswig, 1969
1	S	Callahan, 1971
1	S	Degnan, 1967
1	S	Devine, 1968
1	S	Dutton, 1968a
1	S	Feldhake, 1966
1	S	Greenfeld and Finkelstein, 1970
1	S	Harrison, 1969
3	S	Hernandez, 1973
1	S	Hess and Tenezakis, 1973
1	S	Higgins, 1970
1	S	Hill, 1967
1	S	Holly et al., 1973
1	S	Holtan, 1964
1	S	Klinkerman and Bridges, 1967
1	S	Naylor and Gaudry, 1973
1	S	Postlethwaite, 1971
1	S	Roberts, 1970
1	S	Smith, 1973
1	S	Travers, 1967
3	S	Wiersma, 1972

2	E/S	Amendola, 1973
2	E/S	Anttonen, 1968
2	E	Bobbe, 1971
2	E	Caezza, 1970
2	E	Deighan, 1971
2	E	Devane, 1973
2	E	Evans, R. F., 1971
2	E	Fisher, N. C., 1973
2	E	Forhetz, 1971
2	E	Francies, 1971
2	E	Hale, J., 1966
4	E	Hamburg, 1972
2	E	Hansen, B. P., 1966
2	E	Hatch, 1970
2	E	Hayes, 1968
2	E	Hungerman, 1966
2	E/S	Ingle, 1973
2	E/S	Jacks, 1972
2	E	Johnson, G. S., 1973
2	E	Jones, B., 1973
2	E	Keane, D. F., 1969
4	E	Kilman, 1971
2	E	Koch, D. R., 1972

Attitudes, self-concept, and climate (cont.)

2	E	Lamanna, 1969
2	E/S	Levine, G. I., 1973
2	E	Logiudice, 1970
2	E/S	Malcolm, 1971
2	E	Mastantuono, 1971
2	E	McCardle, 1966
2	E/S	McClure, W. C., 1971
2	E	McKinstry, 1964
2	E	Miller, Donald D., 1970
2	E	Moore, B. D., 1972
2	E/S	Nealeigh, 1968
2	E	Neujahr, 1971
2	E	Ordonez, 1971
2	E	Pate, 1964
2	E/S	Phelps, 1964
4	E	Pond, 1973
2	E	Robbins, 1973
2	E	Robinson, M. L., 1973
2	E	Singleton, 1972
2	E	Stillwell, 1966
2	E	Studer, 1972
2	E/S	Taylor, R. P., 1971
2	E	Vakil, 1971
2	E/S	Weise, 1967
2	E	Wess, 1970
2	E/S	Woodall, 1967
2	E	Young, J. H., 1970

2	S	Arulsigamoni, 1973
2	S	Bachman, 1969
2	S	Ball, 1973
2	S	Beaton, 1967
2	S	Birr, 1969
2	S	Burbank, 1970
2	S	Byars, 1971
2	S	Cech, 1970
2	S	Dean, 1968
2	S	Devine, 1967
2	E	Earle, H. F., 1973
2	S	Farley, 1969
2	S	Ferderbar, 1965
4	S	Fey, 1969
2	S	Foust, 1969
2	S	Haven, 1971
4	S	Hernandez, 1970
4	S	Hill, J. C., 1970
2	S	House, 1973
2	E/S	Hudson, 1965
2	S	Johnson, S. A. H., 1966
2	S	Kester, 1969
2	S	Kilpatrick, 1968
4	S	Kysilka, 1970
2	S	Lewis, V. C., 1969
2	S	Mealy, 1971
2	S	Osborn, 1966
2	S	Peskin, 1966
2	S	Phillips, R. B., 1970
2	S	Podojil, 1972
2	S	Posamentier, 1973
2	S	Schaefer, W. A., 1972
2	S	Schneider, 1970
2	S	Skvarcius, 1972
2	S	Smith, I. A., 1972
2	S	Solheim, 1971
2	S	Spickerman, 1970
2	S	Stanford, 1970
2	S	Starkey, 1971
4	S	Stilwell, M. E., 1968
2	S	Travers, 1966
2	S	Yawin, 1973
2	S	Zamboni, 1969
2	S	Zander, 1973

6	S	Aiken, 1971
6	E/S	Anderson and Johnson, 1968
6	E	Buchanan et al., 1969
6	S	Doak, 1966
6	S	Higgins, 1969
6	E	Hollis, 1972
6	E/S	Longstaff et al., 1968
6	S	Proctor and Wright, 1961
6	S	Rising and Ryan, 1966a
6	S	Rising and Ryan, 1966b
6	S	Rosenbloom et al., 1966
6	S	Ryan, 1967
6	S	Smith and Hess, 1972
6	S	Tocco, 1971

International comparisons

1	E	Brownell, 1964
1	E/S	Ciborowski and Cole, 1972
1	E	Dutton, 1968b
1	E	Hollos and Cowan, 1973
1	E	Lester and Klein, 1973
1	E	Lewy, 1972
1	E	Lindgren et al., 1964
1	E	Lloyd, 1971
1	E	Miller, 1964
1	E	Ohuche, 1971
1	E	Pace, 1966
1	E/S	Pella, 1965
1	E	Sherman and Belding, 1965
1	E	Thompson and Perrodin, 1964

1	S	Brandenburg
1	S	Fremer, Coffman, and Tyalor, 1968
1	S	Harrison, 1969
1	S	Johnson and Anderson, 1964
1	S	Miller, 1966
5	S	Postlethwaite, 1969
1	S	Sato, 1968
3	S	Wiersma, 1967
3	S	Wiersma, 1972

2	E	Begum, 1970
2	E/S	Bruni, 1968
2	E	Dain, 1967
2	E	Hausher, 1970
2	E/S	Jacobsen, 1969
2	E/S	Jahn, 1969
2	E	Kamara, 1972
2	E	Kansky, 1969
2	E	Keane, D. L., 1973
2	E	Khan, M. A., 1971
2	E	Kristjansdottir, 1972
2	E	Mehl, M. V., 1966
2	E	Neville, 1972
2	E/S	Opper, 1972
2	E	Otaala, 1971
2	E	Siu, 1973
2	E/S	Taylor, R. P., 1971
2	E	Weinstein, P. S., 1973

2	S	Abeles, F., 1965
2	S	Ahmad, 1970
2	S	Ali, 1967
2	S	Alsaqqar, 1965
2	S	Anderson, R. A., 1965
2	S	Baroya, 1967
2	S	Chaing, 1972
2	S	Choe, 1971
2	S	Cole, 1971
2	S	El-Naggar, 1966
4	S	Hageltom, 1973
2	S	Horne, 1967
2	S	Houston, 1969
2	S	Jamshaid, 1969
2	S	Johnson, S. A. H., 1966
2	S	Jorgensen, P. S., 1968
2	S	Kim, 1972
2	S	MacDonnell, 1973
2	S	Mwaniki, 1973
2	S	Palmer, 1968
4	S	Shouk, 1966
2	S	Soriyan, 1972
2	S	Zur, 1968

6	E	Diller et al., 1969
6	E	Jacobs, 1968
6	S	Jahn and Medlin, 1969
6	E/S	ED 023 584, 1967
6	S	ED 029 742, 1969

Pre-first grade concepts

1	E	Brace and Nelson, 1965
1	E	Dunkley, 1965
1	E	Gray and Klaus, 1970
1	E	Heard, 1970
1	E	Josephina, 1964a
1	E	Josephina, 1964b
1	E	Kaufman and Kaufman, 1972
1	E	Montague, 1964
1	E	Nolan and Pendarvis, 1970
1	E	Pattison and Fielder, 1969
1	E	Plant and Southern, 1972

Pre-first grade concepts (cont.)

1	E	Rea and Reys, 1970a
1	E	Rea and Reys, 1970b
1	E	Rea and Reys, 1971a
1	E	Rea and Reys, 1971b
1	E	Reys and Rea, 1970
1	E	Roberts and Bloom, 1967
1	E	Schwartz, 1969
1	E	Scott, 1973
1	E	Stephens and Dutton, 1969
1	E	Ulrich, Louisell, and Wolfe, 1971
1	E	Williams, 1965
2	E	Alford, 1971
2	F	Brantley, 1971
2	E	Brewer, B. A., 1970
2	E	Brudenell, 1970
2	E	Brush, 1973
2	E	Carlisle, 1969
2	E	Carr, D. H., 1971
2	E	Chatburn, 1973
2	E	Coyle, 1969
2	E	Dellinger, 1972
2	E	DePasarell, 1971
2	E	Dickerscheid, 1970
2	E	Dorman, 1969
2	E	Emanuel, 1971
2	E	Fairman, 1973
2	E	Gatz, 1973
2	E	Hammond, R. K., 1972
2	E	Heimgartner, 1968
2	E	Herman, 1973
2	E	Hosey, 1973
2	E	Hutton, 1970
2	E	Janda, 1972
2	E	Johnston, B. B. K, 1964
2	E	Jones, R. S., 1971
2	E	Kannegieter, 1969
2	E	Kristjansdottir, 1972
2	E	Lazarus, 1972
2	E	Leeb-Lundberg, 1972
2	E	Mundy, 1973
2	E	Phillips, W. D., 1964
2	E	Plummer, 1972
2	E	Raygor, 1972
2	E	Rickard, 1967
2	E	Schimmel, 1972
2	E	Searle, 1968
2	E	Stephens, L. E., 1964
2	E	Stommel, 1967
2	E	Traywick, 1972
2	E	White, J. N., 1971
2	E	White, B. J., 1972
2	E	Williams, A. H., 1964
2	E	Yonally, 1972
6	E	Adkins et al., 1969
6	E	Antkoviak, 1972
6	E	Bereiter et al., 1969
6	E	Bernbaum, 1971
6	E	Larson, 1972
6	E	Owens, 1972
6	E	Schmalohr, 1971
6	E	ED 057 908, 1971

Readiness

1	E	Greabell and Uprichard, 1973
1	E	Harper, Steffe, and Van Engen, 1969
1	E	Josephina, 1965
1	E	Williams, 1965
1	S	Leake, 1965
2	E	Abbott, 1964
2	E	Anderson, D. G., 1971
2	E	Atwood, 1971
2	E	Binkley, 1967
2	E	Cargill, 1973
2	E	Carson, 1972
2	E	Emmons, 1969
2	E	Ferguson, N. U., 1967
2	E	Fortson, 1970
2	E	Knowlden, 1967
2	E	Loughlin, 1966
2	E	Mackey, 1969
2	E	McCune, 1971
2	E	Rohr, 1973
2	E	Rutherford, W. L., 1965
2	E	Uprichard, 1970
2	E	Willis, 1973
2	S	Tucker, J., 1970

Readiness (cont.)

6	E	Harper, 1970
6	E	Kohen-Raz, 1969
6	E	Torrance, 1969

Content organization and inclusion

1	E	Armstrong, 1969
1	E	Callahan and Robinson, 1973
1	E	Farris, 1973
1	E	Hostetler, 1973
1	E	King, 1973
1	E	Klein, 1973
1	E	Krich, 1964
1	E	Shepler, 1970
1	E	Stodoisky and Karlson, 1972
1	E	Uprichard, 1970
1	E	Wang, Resnick, and Boozer, 1970
5	E	White, 1973
1	E	Willson, 1972
1	S	Alspaugh and Delon, 1967
1	S	Alspaugh, Kerr, and Reys, 1970
1	S	Brown, 1970
5	S	Brown and Abell, 1966
1	S	Gavurin, 1971
1	S	Long and Herr, 1973
1	S	Niedermeyer, Brown, and Sulzen, 1969
1	S	Reys, Kerr, and Alspaugh, 1969
1	S	Reys, Kerr, and Alspaugh, 1969
1	S	Werner, 1970
1	S	Williams, 1970a
1	S	Williams, 1970b
2	E	Adams, L. J. H., 1971
2	E/S	Appel, 1973
2	E	Braswell, 1970
2	E	Callahan, W. T., 1964
2	E/S	Crespy, 1970
2	E	Creswell, 1972
2	E	Cromer, 1971
2	E	Dunlap, 1971
2	E	Farris, 1971
2	E/S	Furgele, 1966
2	E	Gray, W. L., 1970
2	E/S	Hanna, J. E., 1966
2	E	Hegedus, 1972
2	E	Hostetler, 1971
2	E	Howard, F. H., 1970
2	E/S	Hynes, 1971
2	E/S	Jahn, 1969
2	E	Klein, P. A., 1971
2	E	Kolb, 1968
2	E/S	Kriewall, 1970
2	E/S	Olsen, G. W., 1969
2	E	O'Neill, 1971
2	E	Parker, 1973
2	E	Pattison, 1973
2	E/S	Riggle, 1968
2	E	Smith, E. M. R., 1971
2	E	Swyers, 1970
2	E	Tanner, V. J. L., 1972
4	E	Vinskey, 1971
2	E/S	Weise, 1967
2	E	Wickens, 1970
2	E	Young, J. H., 1970
2	S	Abeles, F., 1965
2	S	Barto, 1967
2	S	Beninati, 1964
4	S	Boliver, 1972
2	S	Buchalter, 1969
2	S	Byham, 1970
4	S	Calloway, 1971
4	S	Chavier, 1965
2	S	Crawford, M. W., 1967
2	S	Dunson, 1970
2	S	Fishman, 1966
2	S	Foust, 1969
2	S	Haenisch, 1967
2	S	Hall, L. T., 1970
2	S	Hatfield, 1970
2	S	Hatz, 1966
2	S	Hawkinson, 1968
2	S	Hawthorne, 1966
2	S	Higgins, J. L., 1967
4	S	Hodgin, 1967
2	S	Hollingshead, 1966
2	S	Horne, 1967
2	S	Howard, V. G., 1969

Content organization and inclusion (cont.)

2	S	Jacobs, 1970
2	S	Jamshaid, 1969
2	S	Johanson, 1972
2	S	Jorgensen, P. S., 1968
2	S	Kazim, 1965
2	S	Kern, 1973
2	S	Libeskind, 1971
2	S	Linkhart, 1968
2	S	McKinney, 1965
2	S	Merfeld, 1969
2	S	Monk, 1966
2	S	Montgomery, W. G., 1969
2	S	Myers, 1972
2	S	Nicely, 1970
2	S	Pang, M. S. Y., 1968
2	S	Quast, 1968
2	S	Reynolds, 1973
2	S	Rust, 1965
4	S	Schaefer, M. G., 1967
2	S	Schrader, 1973
2	S	Smith, C. L., 1965
4	S	Smith, S. D., 1967
4	S	Smith, G. A., 1972
2	S	Sooy, 1970
2	S	Stubblefield, 1964
2	S	Szabo, 1970
2	S	Taylor, J. D., 1970
2	S	Truax, 1965
2	S	Tucker, J., 1970
2	S	Usiskin, 1970
2	S	Ward, W. F., 1973
2	S	Werner, 1969
2	S	Wixson, 1970
6	E	Adkins et al., 1969
6	E	Bereiter et al., 1969
6	E	Boozer and Lindvall, 1971
6	S	Bushnell, 1966
6	E/S	Della-Piana et al., 1965
6	S	Gordon, 1969
6	S	Jahn and Medlin, 1969
6	E	Resnick et al., 1970
6	E	Steele and House, 1972
6	E	Van Wagenen and Zellner, 1972
6	E/S	Walbesser and Eisenberg, 1972
6	E	Wang et al., 1970
6	E/S	ED 023 584, 1967

Quantitative understanding

1	E	Flournoy, 1967a
1	E	Flournoy, 1967b
1	E	Josephina, 1965
1	E	Pace, 1968
1	E	Pattison and Fielder, 1969
1	E	Ross, 1970
1	E	Ter Keurst, 1968
1	E	Von Brock, 1965
1	E	Williams, 1965
1	S	Thurlow, 1965
2	E	Carlisle, 1969
2	E	Dorman, 1969
2	E	Hall, D. E., 1967
2	E	Mermelstein, E., 1965
2	E	Miller, L. H., 1965
2	E	Robinson, I. C., 1968
2	E	Weber, 1970
2	E	Wickens, 1970
4	S	Alspaugh, 1966
2	S	Hodges, 1964
2	S	Werner, 1969

Grade placement

1	E	D'Augustine, 1964
1	E/S	D'Augustine, 1966
1	E	Denmark and Kalin, 1964
1	E	Krich, 1964
1	E/S	Meyen and Hieronymus, 1970
1	E	Miller, 1964
1	E	Scott, 1965
1	E	Suppes and Binford, 1965

Grade placement (cont.)

1	S	Alspaugh, 1971
1	S	Alspaugh, Kerr, and Reys, 1970
1	S	Reys, Kerr, and Alspaugh, 1969
1	S	Weiss, 1969
2	E/S	Burdick, 1970
2	E/S	D'Augustine, 1964
2	E	Lorenzen, 1973
2	E	Ly, 1965
2	E	Moore, C.C., 1970
2	E/S	Sowder, 1970
2	S	Bezdek, 1967

Time allotment

1	E	Jarvis, 1966
1	E	Milgram, 1969
1	E	Pigge, 1966
1	E	Pigge, 1967
5	E	Riedesel, 1971
1	E	Scott, 1973
1	E	Shuster and Pigge, 1965
1	S	Zahn, 1966
2	E	Gates, 1969
2	E	Hopkins, C. D., 1966
2	E/S	Hynes, 1971
2	E	Lawson, 1966
2	E	Salzberg, 1973
2	S	Albers, 1973
2	S	Buchman, 1972
2	S	Faist, 1972
2	S	Goldberg, 1971
2	S	Gould, 1971
2	S	Rust, 1965
2	S	Zahn, 1966
6	S	Hagan, 1967
6	S	ED 029 742, 1969

Counting

1	E	Belin and Gillman, 1967
1	E	D'Mello and Willemsen, 1969
2	E	Eggleston, 1972
2	E	Henry, D. E., 1972
2	E	Khan, A., 1973
2	E	Plunkett, 1968
2	E	Regula, C. R., 1973
2	E	Wheatley, 1968
2	S	Nibbelink, 1972

Number properties and relations

1	E	Ahr and Youniss, 1970
1	E	Armstrong, 1969
1	E	Ashlock, 1968
1	E	Darnell and Bourne, 1970
1	E	Estes and Combs, 1966
1	E	Flournoy, 1964
1	E	Hirschbuhl, 1973
1	E	Ingersoll, 1971
1	E	Jacobs and Vandeventer, 1971
1	E	Owens and Steffe, 1972
1	E	Schwartz and Scholnick, 1970
1	E	Silverstein, Auger, and Krudis, 1964
1	E	Steffe, 1970
1	E	Steffe and Carey, 1972
1	E	Uprichard, 1970
1	E	Wang, Resnick, and Boozer, 1971
1	E	Weaver, 1973
1	S	Collis, 1971
1	S	Flournoy, 1964
1	S	Holtan, 1967
2	E	Baumann, 1966
2	E	Carmody, 1971
2	E/S	Crawford, D. H., 1965
2	E	Divers, 1972

Number properties and relations (cont.)

2	E	Gravel, 1968
2	E	Hirschbuhl, 1972
2	E	Hopkins, L. V., 1972
2	E	Johnson, D. C., 1972
2	E	Johnson, M. L., 1972
2	E	Lamon, 1969
2	E	Lorenzen, 1973
2	E/S	O'Daffer, 1969
2	E	Owens, 1973
2	E	Plunkett, 1968
2	E	Portis, 1973
2	E	Prindeville, 1972
2	E	Raeihle, 1972
2	E/S	Roberts, W. J., 1971
2	E	Rose, 1971
2	E	Schmidt, 1966
2	E	Smith, R. F., 1972
2	E	Thurner, 1970
2	E	Vitello, 1972
2	E	Weiner, 1972
2	E	Wieters, 1971
2	E	Wozniak, 1972

4	S	Cooney, 1970
2	S	Maricle, 1970
2	S	Melaragno, 1967
4	S	Naramore, 1969
2	S	Prielipp, 1968

6	E	Ginsberg, 1971
6	E	Johnson, 1972
6	E	Owens, 1972
6	E/S	Owens and Cooney, 1972
6	E/S	Weaver, 1973

Whole numbers

1	E	Flournoy, 1967
1	E	Glaser, Reynolds, and Fullick, 1966

1	S	Cech, 1972
3	S	Hosford, 1973

2	E/S	Bailey, J. M., 1973
2	E/S	Burrow, 1970
2	E	Ellis, L. C., 1972
2	E	Flynn, 1971
2	E	Krug, 1973
2	E	Stuart, 1967
2	E	Vest, 1969

2	S	Maricle, 1970
2	S	Nibbelink, 1972

6	E	Beattie and Deichmann, 1972
6	E	Deichmann and Beattie, 1972
6	S	Lankford, 1972
6	E/S	Murphy, 1968

Addition with whole numbers

1	E	Baker and Sullivan, 1970
1	E	Boersma et al., 1970
1	E	Elkind, Anagnostopoulou, and Malone, 1970
1	E	Engle and Lerch, 1971
1	E	Grouws, 1972
1	E	Kaplan, 1969
1	E	Kaplan, 1970
1	E	Smith and Shaw, 1969
1	E	Steffe, 1968
1	E	Steffe, 1970
1	E	Steffe and Johnson, 1971
1	E	Ter Keurst, 1968
1	E	Weaver, 1971
1	E	Weaver, 1972
1	E	Weaver, 1973
1	E	Wiles, Romberg, and Moser, 1973

2	E/S	Aims, 1971
2	E	Barnes, 1971
2	E	Baumann, 1966
2	E	Bolduc, 1970
2	E	Bull, M. R., 1966
2	E	Brush, 1973
2	E	Cotton, 1972
2	E	Coxford, 1966

Addition with whole numbers (cont.)

2	E	Ekman, 1967
2	E	Groen, 1968
2	E	Grouws, 1972
2	E	Hutchings, 1973
2	E	Johnson, G. F., 1967
2	E	Jones, R. C., 1972
2	E	Kansky, 1969
2	E	Knaupp, 1971
2	E	Marks, 1965
2	E/S	McMahan, 1972
2	E	Offir, 1971
2	E	Regula, C. R., 1973
2	E	Sandefur, 1966
2	E	Spencer, J. E., 1968
2	E	Wheeler, L. E., 1972
6	E	Grouws, 1972
6	E	Payne, 1967
6	E	Steffe, 1967
6	E	Steffe and Van Engen, 1966
6	E	Wiles, Romberg, and Moser, 1972

Subtraction with whole numbers

1	E	Baker and Sullivan, 1970
1	E	Groen and Poll, 1973
1	E	Grouws, 1972
1	E	Kaplan, 1969
1	E	Kaplan, 1970
1	E	Rainey and Kelley, 1967
1	E	Steffe and Johnson, 1971
1	E	Weaver, 1971
1	E	Weaver, 1972
1	E	Weaver, 1973
1	E	Wiles, Romberg, and Moser, 1973
2	E/S	Aims, 1971
2	E	Brush, 1973
2	E	Cotton, 1972
2	E	Coxford, 1966
2	E	Ekman, 1967
2	E	Grouws, 1972
2	E	Johnson, G. F., 1967
2	E	Jones, R. C., 1972
2	E	Knaupp, 1971
2	E	LeBlanc, 1968
2	E	Osborne, 1967
2	E	Sandefur, 1966
2	E	Smith, C. W., 1969
2	E	Spencer, J. E., 1968
2	E	Trafton, 1971
2	E	Wheeler, L. E., 1972
6	E	Grouws, 1972
6	E	Payne, 1967
6	E	Wiles, Romberg, and Moser, 1972

Multiplication with whole numbers

1	E	Crist, 1966
1	E	Grafft, 1970
1	E	Grafft and Ruddell, 1968
1	E	Gray, 1965
1	E	Harvey and Kyte, 1965
1	E	Hervey, 1966
1	E	Higgins and Rusch, 1965
1	E	Jerman, 1970
1	E	Lucow, 1964
1	E	Moody, Abell, and Bausell, 1971
1	E	Rainey and Kelley, 1967
1	E	Schell, 1968
1	E/S	Weaver, 1973
2	E/S	Anderson, R. M., 1970
2	E/S	Barnes, O. D., 1971
2	E	Cromer, 1971
2	E	Dansereau, 1969
2	E	Gray, R. F., 1965
2	E	Hall, K. D., 1967
2	E	Haynes, J. O., 1964
2	E	Hervey, 1966
2	E	Hughes, F. G., 1973
2	E	Kansky, 1969
2	E	Karlin, 1972

Multiplication with whole numbers (cont.)

2	E	Kratzer, 1972
2	E	Lawson, 1966
2	E	Macready, 1972
2	E	Nichols, E. J., 1972
2	E	Rousseau, 1972
2	E	Schell, 1965
2	E	Schrankler, 1967
2	E	Tietz, 1969
2	E	Trask, 1973
2	S	Beamish, 1968
2	S	Zinn, 1972
6	E/S	Weaver, 1973

Division with whole numbers

1	E	Higgins and Rusch, 1965
1	E	Kratzer and Willoughby, 1973
1	E	Kurtz, 1973
1	E	Lucow, 1964
1	E	Zweng, 1964
2	E/S	Anderson, R. M., 1970
2	E	Beardslee, 1973
2	E	Burkhart, 1968
2	E	Dilley, 1970
2	E	Fleckman, 1967
2	E	Nichols, E. J., 1972
2	E	Schnur, 1970
2	E	Trask, 1973
2	S	Stocks, 1972

Fractions

5	E	Anderson, 1969
1	E	Gray and Allison, 1971
1	E	Hostetler, 1973
1	E	Johnston, Maertens, and Schooley, 1969
1	E	Traweek, 1964
1	E	Willson, 1972
1	S	Cartwright, 1971
2	E	Allen, B. A., 1973
2	E	Bohan, 1971
2	E	Bronder, 1973
2	E	Brown, C. K., 1973
2	E	Cibbarelli, 1970
2	E	Fogle, 1972
2	E	Gau, 1973
2	E	Guerriero, 1972
2	E	Hostetler, 1971
2	E	Krautheim, 1972
4	E	Leonard, W. A., 1973
2	E	Levin, A. I., 1968
2	E	Richter, 1972
2	E	Sension, 1971
2	E	Williams, M. A., 1970
2	E	Willson, 1969
2	E	Wolff, R. F., 1969
2	S	Cohen, M. S., 1971
2	S	Gaslin, 1972
2	S	Hegstrom, 1972
2	S	Mignerey, 1972
2	S	Rich, 1972
6	S	Lankford, 1972

Addition with fractions

1	E	Fincher and Fillmer, 1965
1	E	Phillips and Kane, 1973
1	E	Pigge, 1966
1	E	Pigge, 1967
1	E	Shuster and Pigge, 1965
2	E	Anderson, R. C., 1966
2	E	Bat-haee, 1969
2	E	Bisio, 1971
2	E	Carney, 1973
2	E	Hall, W. H., 1971
2	E	Phillips, E. R., 1972
2	E	Pickering, M. A. P., 1969

Addition with fractions (cont.)

2	E	Pigge, 1964
2	E	Stenger, 1972
2	E	Thompson, R. B., 1965

Subtraction with fractions

1	E	Fincher and Fillmer, 1965
1	E	Pigge, 1966
1	E	Pigge, 1967
1	E	Shuster and Pigge, 1965
2	E	Bat-haee, 1969
2	E	Bisio, 1971
2	E	Carney, 1973
2	E	Pigge, 1964
2	E	Stenger, 1972

Multiplication with fractions

1	E	Beamer and Lemke, 1973
1	E	Grafft and Ruddell, 1968
1	E	Kyte and Fornwalt, 1967
1	E	Miller, 1964
1	E	Romberg, 1968
2	E	Arvin, 1966
2	E	Austin, G. R., 1966
2	E	Beamer, R. H., 1970
2	E	Green, G. A., 1970
2	E	O'Neill, 1971

Division with fractions

1	E	Bergen, 1966
1	E	Bidwell, 1971
1	E	Greatsinger, 1968
1	E	Ingersoll, 1971
1	E	Krich, 1964
1	E	Krich, 1964
2	E	Bidwell, J. K., 1968
2	E	O'Neill, 1971
2	E	Williamson, 1972
2	E	Wilson, J. A., 1968

Decimals

1	E	Beardslee, Gau, and Heimer, 1973
1	E	Gipson, 1971
1	E	Hillman, 1969
1	E	Smith and Shaw, 1969
1	E	Willson, 1972
2	E	DeLucia, 1973
2	E	Northcutt, 1964
2	E	O'Brien, 1968
2	E	Oner, 1972
2	E	Sloan, 1970
2	E	Weinstein, M. S., 1973
2	E	Willson, 1969
2	S	Purser, 1973

Percentage

2	E	Bidwell, C. G., 1969
2	E	McCarty, 1967
2	S	May, L. J., 1966
2	S	Purser, 1973
2	S	Smith, H. K., 1968
2	S	Wynn, 1966

Ratio and proportion

1	E	Fischbein, Paumpu, and Manzat, 1970
1	E/S	Karplus and Karplus, 1972
1	E/S	Karplus and Peterson, 1970
1	E	Nelson, Zelniker, and Jeffrey, 1969

Ratio and proportion (cont.)

1	E	Paschal, 1966

2	E	Geisert, 1972
2	E	Harmon, 1970

2	S	Higgins, J. L., 1967
2	S	May, L. J., 1966

Measurement

1	E	Bassler, 1968
1	E	Carey and Steffe, 1971
1	E	Carlson, 1969
1	E	Daehler, 1972
1	E	Dutton, 1967
1	E	Dutton and Riggs, 1969
1	E	Glaser, Reynolds, and Fullick, 1966
1	E	Gruen, 1965
5	E	Huntington, 1970
1	E	Lumsden and Kling, 1969
1	E	Montgomery, 1973
1	E	Murray, 1965
1	E	Nelson, Zelniker, and Jeffrey, 1969
1	E	O'Reilly and Steger, 1970
1	E	Paige and Jennings, 1967
1	E/S	Pick and Pick, 1967
1	E	Pyatte, 1969
1	E	Rea and Reys, 1971
1	E	Robinson, 1964
1	E	Romberg and Gilbert, 1972
1	E	Sawada and Nelson, 1967
1	E	Scott, 1966
1	E	Siegel and McBurney, 1970
1	E	Spagnoli, 1965
1	E	Stephens and Dutton, 1969

1	S	Friebel, 1967
5	S	Murphy and Polzin, 1969

2	E	Anselmo, 1967
2	E/S	Austin, G. F., 1973
2	E	Bargmann, 1973
2	E	Carpenter, 1972
2	E	Chapman, 1971
2	E	Crist, 1969
2	E	Crooks, 1972
2	E	Divers, 1972
2	E	Dobbs, 1964
2	E	Eroh, 1967
2	E	Fischer, P., 1969
2	E/S	Hanninen, 1969
2	E	Henry, D. E., 1972
2	E	Hughes, F. P., 1973
2	E	Kamps, 1971
2	E	Kosanovich, 1972
2	E	Krenzel, 1971
2	E	McKnight, B. J., 1965
2	E/S	Mermelstein, J., 1964
2	E	Montgomery, M. E., 1973
2	E	Mueller, 1969
2	E	Pattison, 1973
2	E	Pyatte, 1968
2	E	Reisman, 1969
2	E	Richards, K. B., 1971
2	E	Stephens, L. E., 1964
2	E	Swart, 1970
2	E	Tajima, 1965
2	E	Tom, 1967
2	E	Urbach, 1973
2	E	Wagman, 1969
2	E	Williams, M. A., 1970
2	E	Ziegenfuss, 1973

2	S	Craig, 1973
2	S	Friebel, 1965
2	S	Higgins, J. L., 1967
2	S	Jenkins, 1968
2	S	Kuhfittig, 1972
2	S	McFee, 1968
2	S	Wolfe, L. R., 1970

6	E	Carpenter, 1971
6	E	Carpenter, 1972

Negative numbers (integers)

1	E/S	Bassler, Hill, Ingle, and Sparks, 1971
1	E/S	Scandura, Woodward, and Lee, 1967
1	E	Traub, 1966

4	E	Barnard, 1973
2	E	Bracht, 1970

Negative numbers (integers) (cont.)

2	E/S	Burdick, 1970
2	E	Coltharp, 1969
2	E	Crabtree, 1966
2	E	Davis, P. H., 1972
2	E	Gran, 1967
2	E	Pendleton, 1973
2	E	Riley, J. E., 1971
2	E	Sherzer, 1973
2	E	Walbesser, 1967

2	S	Carry, 1968
2	S	Chatterley, 1973
2	S	Hodges, 1969
2	S	Tremel, 1964

6	E/S	Bassler, 1968
6	E	Feldman, 1972
6	S	Sawyer, 1973

Algebra in elementary school

4	E	Prock, 1971

Geometry in elementary school

1	E	Armstrong, 1969
1	E	Arnold and Hale, 1971
1	E	Brumbaugh, 1971
1	E	Callahan and Passi, 1971
1	E	Cicirelli, 1972
1	E	D'Augustine, 1964
1	E/S	D'Augustine, 1966
1	E/S	Davis, 1973
1	E	Denmark, 1968
1	E	Denmark and Kalin, 1964
1	E	Harris, Schaller, and Mitler, 1970
1	E	Josephina, 1964
1	E/S	Kaess, 1970
1	E	Miller, 1964
1	E	Miller, Boismier, and Hooks, 1969
1	E/S	Neatrour, 1969
1	E	Nolan and Pendarvis, 1970
1	E/S	Page, 1973
1	E	Rea and Reys, 1971
1	E	Schnur and Callahan, 1973
1	E	Shah, 1969
1	E	Weaver, 1966
5	E	Williford, 1972
1	E	Williford, 1972

1	S	Bassler, Curry, Hall, and Mealy, 1971
1	S	Henderson and Rollins, 1967

2	E/S	Andrejczak, 1972
2	E	Andrews, E. E., 1967
2	E	Atkinson, 1973
4	E	Banning, 1972
2	E	Bass, 1971
2	E	Becklund, 1969
2	E	Brumbaugh, D. K., 1970
2	E	Campbell, B. L., 1972
2	E	Caraher, 1972
2	E	Coyle, 1969
2	E	Cronin, V. S., 1966
2	E/S	D'Augustine, 196r
2	E/S	Davis, E. J., 1970
2	E	Davis, W. E., 1969
2	E	Esty, 1971
4	E	Ferguson, F. F., 1973
2	E	Frayer, 1970
2	E/S	Gallick, 1971
4	E	Gannon, 1973
2	E	Gatz, 1973
2	E	Genkins, 1971
2	E	Gildemeister, 1973
2	E	Girgus, 1970
2	E	Greenberg, 1970
2	E	Greenes, 1970
2	E	Greer, 1972
4	E	Grimes, 1971
2	E	Herbst, 1968
2	E	Houde, 1973
2	E	Hubert, 1971
2	E	Hughes, F. P., 1973
2	E	Jencks, 1969
2	E	Johnson, R. L., 1971
2	E	Johnson, L. H., 1972
2	E	Johnson, H. C., 1973
2	E/S	Julian, 1972
4	E	Keith, 1971
2	E/S	Kidder, 1973
2	E	Knight, G. M., 1971
2	E	Koch, R. R., 1971

Geometry in elementary school (cont.)

4	E	Mahan, E. A., 1971
4	E/S	Martin, B. L., 1967
2	E	Milgram, 1970
2	E	Minsky, 1970
2	E	Moody, 1968
2	E/S	Neatrour, 1969
2	E/S	Palow, 1970
2	E/S	Peck, 1971
2	E	Perciante, 1973
2	E	Peterson, G. D., 1973
2	E	Plummer, 1972
2	E	Robinson, L. T., 1970
4	E	Rollins, 1973
4	E	Russell, 1973
2	E	Sams, 1969
2	E	Schloff, 1973
2	E	Scott, J. A., 1971
2	E	Sharp, 1969
2	E	Smith, G. W., 1971
2	E	St. Clair, 1968
2	E	Stone, J. L., 1968
2	E	Taback, 1970
2	E	Turner, M. L., 1968
2	E	Urbach, 1973
2	E	Wilkinson, J. D., 1971
2	E	Williams, T. M., 1970
2	E	Williford, 1971
2	E/S	Wiviott, 1971

2	S	Cheatham, 1970
2	S	Nelson, B. A., 1973
2	S	Newstat, 1973
2	S	Purser, 1973

6	E	Bright, 1973
6	E	Frayer, 1970
6	E	Howe, 1972
6	E	Martin, 1973
6	E	Nelson, 1972
6	S	Nelson and Frayer, 1972
6	E	Reisman, 1968
6	E	Shah, 1971
6	E	Williford, 1971

Sets

1	E	Armstrong, 1969
1	E	King, Roberts, and Kropp, 1969
1	E/S	Neimark and Slotnick, 1970
1	E	Uprichard, 1970

1	S	Bivens, 1964
1	S	Campbell, 1964
1	S	Randolph, 1964

2	E	Bolduc, 1970
2	E	Ciklamini, 1969
2	E	Frayer, 1970
2	E	McKellips, 1965
2	E	Uprichard, 1970

2	S	Czarnec, 1973
2	S	Eigen, 1964
2	S	MacPherson, 1967
2	S	Smith, H. K., 1968

Logic and proofs

1	E/S	Allen, 1965
1	E/S	Ciborowski and Cole, 1972
1	E	Feldman, 1972
1	E	Halpern, 1965
1	E/S	Karplus and Karplus, 1970
1	E	King, 1973
1	E	Lewis, 1966
1	E/S	Neimark and Slotnick, 1970
1	E	O'Brien and Shapiro, 1968
1	E/S	Paris, 1973
1	E	Roberge, 1969
1	E	Roberge, 1970
5	E	Roberge, 1972
1	E	Scott, 1965
1	E	Shapiro and O'Brien, 1970
1	E	Snow and Rabinovitch, 1969
1	E	Suppes, 1964

Logic and proofs (cont.)

1	E	Suppes and Binford, 1965
1	E	Suppes and Feldman, 1971

1	S	Hanna, 1971
1	S	Houtz, Moore, and Davis, 1973
1	S	Keats and Hansen, 1972
1	S	Miller, 1969
1	S	Moore and Cain, 1968
1	S	Retzer and Henderson, 1967
1	S	Scott and Rude, 1970
1	S	Shumway, 1970

2	E	Bowen, J. J., 1970
2	E	Darnell, 1969
2	E	Feldman, 1969
2	E/S	Fetzer, 1972
2	E/S	Gardiner, 1966
2	E	Guy, 1968
2	E	Heine, 1972
4	E	Heisey, 1966
2	E	Hill, W. H., 1971
2	E	Houde, 1973
2	E	Johnson, H. N., 1971
2	E	Johnson, D. C., 1972
2	E	Jones, J. N. J., 1969
2	E/S	Lesher, 1971
2	E/S	Lester, 1973
2	E	Lowerre, 1972
2	E/S	Matulis, 1970
2	E	McAloon, 1969
4	E	McCoy, 1972
2	E	McCreary, 1965
2	E	McGinty, 1973
4	E	McHenry, 1971
2	E/S	Roberge, 1969
2	E/S	Ryoti, 1973
2	E	Sheppard, 1972
2	E	Tucker, R. C., 1971
2	E	Weeks, G. M., 1971

2	S	Bostic, 1971
2	S	Braxton, 1973
2	S	Bree, 1969
2	S	Byham, 1970
2	S	Carroll, C. A., 1971
4	S	Cooney, 1970
2	S	Czarnec, 1973
2	S	Deer, 1969
4	S	Friedman, 1973
2	S	Gregory, 1972
2	S	Haenisch, 1967
2	S	Hale, W. T., 1965
2	S	Harbeck, 1973
2	S	Heighton, 1973
2	S	Heisey, 1966
2	S	Hildebrand, 1968
2	S	Holmes, A. H., 1969
2	S	Howell, E. N., 1966
2	S	Hrabi, 1968
2	S	Kaufmann, J. E., 1969
2	S	Kove, 1973
2	S	Martin, R. C., 1971
2	S	McGannon, 1971
2	S	Miller, W. A., 1968
2	S	Patterson, 1970
2	S	Platt, 1968
2	S	Reeves, C. A., 1972
2	S	Retzer, 1967
2	S	Reynolds, 1973
2	S	Robinson, G. E., 1964
2	S	Roy, 1971
2	S	Sharlow, 1971
2	S	Shumway, 1970
2	S	Van Akin, 1972
2	S	Ward, R. A., 1972

6	S	Gregory, 1972
6	S	Retzer, 1969
6	S	Shumway, 1972a
6	S	Shumway, 1972b
6	E	Sowder, 1972

Decimal numeration system

1	E	Bausell, Moody, and Walzl, 1972
1	E	Callahan and Robinson, 1973
1	E	Diedrich and Glennon, 1970
1	E	Lyda and Taylor, 1964
1	E	McNeil, 1965
1	E	Moody, Bausell, and Jenkins, 1973
1	E	Smith, 1973

Decimal numeration system (cont.)

2	E	Kaufman, R. A., 1964
2	E	Knaupp, 1971
2	E	McCormick, 1965
2	E	Muckey, 1971
2	E	Santos, 1969
2	E	Scrivens, 1968
4	E	Skipper, 1973
2	E	Smith, C. W., 1969
2	E	Smith, S. E., 1968

6	S	Neuhouser, 1965

Other numeration systems

1		Bassler, Hill, Ingle, and Sparks, 1971
1		Bausell and Moody, 1972
1		Bradley and Earp, 1966
5		Cruikshank and Arnold, 1969
1		Diedrich and Glennon, 1970
1		Higgins, 1972
1		Hollis, 1964
1		Lyda and Taylor, 1964
1		Schlinsog, 1968
1		Trueblood, 1970

1		Jamison, 1964
1		Paige, 1966

2		Bramwell, 1970
2		Buchanan, A. D., 1972
2		Carmody, 1971
2		Curry, 1971
2		Diedrich, 1970
2		Higgins, J. E., 1970
2		Jackson, R. L., 1966
2		Kavett, 1969
2		Kirkpatrick, 1971
2		Leary, 1972
2		Muckey, 1971
2		Rathmell, 1973
2		Schlinsog, 1966
2		Skipper, 1973
2		Smith, S. E., 1968
2		Thompson, R. B., 1965

2	S	Barcaski, 1970
2	S	Behr, 1967
2	S	Glaser, 1970
2	S	McMillian, 1973
2	S	Oates, 1966
2	S	Ratzlaff, 1971

6	E/S	Bassler, 1968
6	E	Kavett, 1969

Probability and statistics

1	E	Goldberg, 1966
1	E	Ojemann, Maxey, and Snider, 1965
1	E	Romberg and Shepler, 1973
1	E	Shepler, 1970

1	S	Leake, 1965
1	S	Shulte, 1970

2	E	Armstrong, P. W., 1972
2	E	Doherty, 1966
2	E	Gipson, 1972
2	E/S	Leffin, 1969
2	E	McLeod, G. K., 1971
2	E	Mullenex, 1969
2	E	Riggs, C. W., 1967
2	E	Shepler, 1970

2	S	Carlow, 1968
2	S	Carroll, C. A., 1971
2	S	Fejfar, 1964
2	S	Holmes, A. H., 1969
2	S	Nelson, N. N., 1971
2	S	Nuhfer, 1971
2	S	Ostheller, 1971
2	S	Shulte, 1968
2	S	Smith, M. A., 1966

6	E/S	Leffin, 1971
6	E	Shepler, 1969
6	E	Shepler, 1970
6	S	Smock and Belovicz, 1968

Functions; graphing

1	E	Lee, 1971
1	S	Holtan, 1967
1	S	Lackner, 1972
2	E/S	Appel, 1973
2	E	Johnson, T. G., 1971
2	E	King, I. V., 1970
2	E	Mahoney, 1971
2	E/S	Olsen, G. W., 1969
2	S	Buchanan, O. L., 1965
2	S	Carry, 1968
2	S	Eigen, 1964
2	S	Isaac, 1970
2	S	Lackner, 1969
2	S	Nelson, L. T., 1969
2	S	Reeves, J. W., 1970
2	S	Sanders, W. J., 1972
2	S	Smith, W. D., 1973
2	S	Spikell, 1972
2	S	Thomas, H. L., 1970
2	S	Ward, W. F., 1973

Basic arithmetic procedures in secondary school

1	S	Brown, 1964
2	S	Cole, W. L., 1971
2	S	Gamble, 1966
2	S	Johnson, R. L., 1971
2	S	Mignerey, 1972
2	S	Zinn, 1972

General mathematics course

1	E	Glaser, Reynolds, and Fullick, 1966
1	S	Beal, 1971
1	S	Brandenburg, 1967
1	S	Brown, 1964
1	S	Campbell, 1964
1	S	Easterday and Easterday, 1968
1	S	Guilford, Hoepfner, and Peterson, 1965
1	S	Hanna, Bligh, and Lenke, 1970
1	S	Hanna et al, 1969
1	S	Holtan, 1964
1	S	Ivanoff, DeWane, and Praem, 1965
1	S	Jones, 1968
1	S	Madden, 1968
1	S	Price, 1967
1	S	Shulte, 1970
2	S	Ball, 1973
2	S	Bryson, 1972
2	S	Cole, W. L., 1971
2	S	Confer, 1971
2	S	Eirich, 1968
2	S	Findley, 1967
2	S	Finnell, 1973
2	S	Gaslin, 1972
2	S	Gussett, 1971
2	S	Howitz, 1966
2	S	Jhin, 1972
2	S	Loh, 1972
2	S	Madden, 1966
2	S	Maynard, 1970
2	S	Mignerey, 1972
2	S	Nix, 1970
2	S	Price, 1966
2	S	Sederberg, 1964
2	S	Shulte, 1968
2	S	Strickland, 1969
2	S	Wiebe, 1966
4	S	Wolfe, R. E., 1969
6	S	Bushnell, 1966
6	S	Cech, 1970
6	S	Maynard and Strickland, 1969
6	S	Spencer and Briggs, 1972

Algebra

1	S	Belcastro, 1966a
1	S	Belcastro, 1966b
1	S	Brown, 1966
1	S	Buchman, 1972
1	S	Cain, 1966
1	S	Call and Wiggin, 1966
1	S	Carpenter and Fillmer, 1965
1	S	Devine, 1968
1	S	Guilford, Hoepfner, and Peterson, 1965
1	S	Hanna, Bligh, and Lenke, 1970
1	S	Holtan, 1967
1	S	Ivanoff, DeWane, and Praem, 1965
1	S	Kulm, 1973
1	S	Lenke, Bligh, and Kane, 1971
1	S	Lucas, 1967
1	S	Mogull and Rosengarten, 1972
1	S	Sabers and Feldt, 1968
1	S	Shaver and White, 1966
1	S	Westley and Severin, 1965
2	S	Anglin, 1966
2	S	Bailey, H. P., 1968
2	S	Ballew, 1966
2	S	Bechtold, 1965
2	S	Becker, 1967
2	S	Blair, 1964
2	S	Boersig, 1973
2	S	Boliver, 1972
2	S	Brantly, 1971
2	S	Brown, L. H., 1970
2	S	Brunner, R. B., 1972
2	S	Buchman, 1967
2	S	Buckner, 1971
2	S	Buethe, 1966
2	S	Bunch, 1973
2	S	Byars, 1971
2	S	Callister, 1966
2	S	Camp, J. S., 1973
2	S	Cangelosi, 1972
2	S	Carry, 1968
2	S	Catanzano, 1972
2	S	Clark, V. D., 1966
2	S	Clewell, 1965
2	S	Dahmus, 1968
2	S	Davis, F. W., 1967
2	S	Dean, 1968
2	S	Denmark, 1965
2	S	Devine, 1967
2	S	Dirr, 1967
4	S	Dixon, B. G., 1968
2	S	Dixon, L. J., 1964
2	S	Eirich, 1968
2	S	Englert, 1972
2	S	Flaherty, 1973
2	S	Ginther, 1965
2	S	Goldberg, 1971
2	S	Gould, 1971
2	S	Haenisch, 1967
2	S	Hake, 1973
2	S	Harris, J. W., 1972
2	S	Hoffman, I. J., 1971
2	S	Holly, 1971
4	S	Howe, 1967
2	S	Hutcheson, 1973
2	S	Johnson, D. C., 1966
2	S	Johnson, R. L., 1971
2	S	Johnson, D. A., 1972
2	S	Katz, 1971
2	S	Kaufmann, J. E., 1969
4	S	Kennedy, 1964
2	S	Kern, 1973
2	S	Lazar, 1972
2	S	Leonard, H. A., 1967
2	S	Lichtenberg, 1967
2	S	Lovett, 1969
2	S	McIntosh, 1965
2	S	Merfeld, 1969
2	S	Monk, 1966
2	S	Napier, 1971
2	S	Ottina, 1964
2	S	Palmer, 1968
2	S	Payne, H. I., 1965
2	S	Prielipp, 1968
2	S	Proctor, 1968
2	S	Raba, 1973
2	S	Rafiq, 1965
2	S	Roberts, G. H., 1966
2	S	Romberg, 1968
2	S	Sabers, 1968
2	S	Schrader, 1973
2	S	Sederberg, 1964
2	S	Sharlow, 1971
2	S	Shoecraft, 1972
2	S	Soeteber, 1970

Algebra (cont.)

2	S	Sooy, 1970
2	S	Taylor, H. D., 1972
2	S	Taylor, L. M., 1972
2	S	Thomas, B. G., 1972
2	S	Tucker, J., 1970
2	S	Urwiller, 1971
2	S	Wallender, 1972
2	S	Webb, 1972
4	S	Wolfe, R. E., 1969
2	S	Zamboni, 1969
2	S	Zoet, 1973

6	S	Archer and Woodlen, 1967
6	S	Bassler et al., 1972
6	S	Beberman and Van Horn, 1960
6	S	Begle, 1972
6	S	Campbell et al., 1963
6	S	Church et al., 1964
6	S	Cook, 1973
6	S	Crosby et al., 1960
6	S	Hagan, 1967
6	S	Herriot, 1967
6	S	Hickey et al., 1962
6	S	Kinzer and Worcester, 1965
6	S	Kulm, 1971
6	S	Love, 1969
6	S	Malinen, 1969
6	S	Paulson, 1964
6	S	Pinsky and Gorth, 1969
6	S	Rosen and Stolurow, 1964
6	S	Ryan, 1967, 1968
6	S	Tiemens, 1962
6	S	Webb, 1972
6	S	ED 026 184, 1965

Geometry

3	E	Bassler, 1966

1	S	Beane, 1965
1	S	Bhushan, Jeffryes, and Nakamura, 1968
1	S	Biddle, 1967
1	S	Boe, 1968
1	S	Bowers, 1973
1	S	Brinkmann, 1966
1	S	Brown, 1967
1	S	Caldwell et al., 1970
1	S	Coppedge and Hanna, 1971
1	S	Flynn, 1969
1	S	Flynn and Mauser, 1971
1	S	Gawronski, 1972
1	S	Hanna, 1966a
5	S	Hanna, 1966b
1	S	Hanna, 1967
3	S	Hanna, 1968
1	S	Hanna, 1971
1	S	Hanna and Lenke, 1970
1	S	Jordy, 1964
1	S	Lenke, Bligh, and Kane, 1971
1	S	Miller, 1966
1	S	Paquette, 1973
1	S	Posamentier, 1966
1	S	Scott and Rude, 1970
1	S	Small, Holtan, and Davis, 1967
1	S	Usiskin, 1972
3	S	Wong, 1970

2	E/S	Gallick, 1971
2	E/S	Labaki, 1973
4	E/S	Martin, 1967
4	E	McCoy, 1972
2	E	Peck, 1971
2	E/S	Wiviott, 1971

2	S	Abeles, F., 1965
2	S	Ahmad, 1970
2	S	Albers, 1973
2	S	Anglin, 1966
2	S	Babbott, 1964
4	S	Barbeau, 1969
2	S	Beard, 1968
2	S	Beavers, 1970
4	S	Bennett, 1971
2	S	Beste, 1964
2	S	Bezdek, 1967
2	S	Biddle, 1967
2	S	Boe, 1967
2	S	Boliver, 1972
2	S	Bowers, 1972
2	S	Bree, 1969
2	S	Bull, S. S., 1971
2	S	Bunch, 1973

Geometry (cont.)

2	S	Bundrick, 1969
2	S	Byham, 1970
2	S	Caldwell, 1970
2	S	Callister, 1966
2	S	Carry, 1968
2	S	Cowan, R. E., 1973
2	S	Davis, J. N., 1970
2	S	Deer, 1969
2	S	Dennis, 1969
2	S	Dixon, L. J., 1964
2	S	Earle, H. F., 1973
2	S	Eastman, 1973
2	S	Everett, 1972
2	S	Farrell, 1968
2	S	Fisher, M. E., 1973
2	S	Fremont, 1964
4	S	Friedman, 1973
2	S	Gawronski, 1971
2	S	Ginther, 1965
2	S	Hake, 1973
2	S	Hamner, 1971
2	S	Hanna, G. S., 1965
2	S	Hanneman, 1972
2	S	Hanson, R. B., 1972
2	S	Harbeck, 1973
2	S	Harris, J. W., 1972
2	S	Hershberger, 1971
2	S	Hoban, 1971
2	S	Hoffman, T. J., 1973
4	S	Howe, 1967
2	S	Hunte, 1966
2	S	Johnson, A. F., 1968
2	S	Johnson, D. A., 1971
2	S	Jurick, 1972
4	S	Kidd, 1972
2	S	Klein, M. P., 1972
2	S	Kort, 1971
2	S	Kriegsman, 1964
2	S	Lash, 1971
2	S	Lorentz, 1971
2	S	Love, 1964
2	S	Mars, 1970
2	S	Martin, R. C., 1971
2	S	McIntosh, 1965
2	S	Melaragno, 1967
2	S	Miller, I. M., 1964
2	S	Mitchell, B. A., 1973
2	S	Morgan, 1966
2	S	Olson, A. T., 1971
2	S	Olson, F. C., 1971
2	S	Paquette, 1972
2	S	Peters, G. E., 1964
2	S	Platt, 1968
2	S	Pruitt, R. L. 1969
2	S	Quast, 1968
2	S	Reeves, C. A., 1972
2	S	Rollins, J. H., 1966
2	S	Sharlow, 1971
2	S	Shilgalis, 1972
2	S	Singletary, 1972
4	S	Smith, J. L., 1964
2	S	Solheim, 1971
2	S	Stephenson, 1972
4	S	Stilwell, M. E., 1968
2	S	Taylor, J. D., 1970
2	S	Taylor, H. D., 1972
2	S	Tremblay, 1973
2	S	Usiskin, 1970
2	S	Van Akin, 1972
2	S	Waters, 1972
2	S	Whipple, 1972
2	S	Wilkinson, A., 1973
4	S	Wolfe, R. E., 1969
4	S	Wong, 1969
2	S	Wunderlich, 1973
4	S	Yates, 1972
4	S	Young, J. L., 1972

6	E	Boe, 1966
6	E	Coulson, 1964
6	E	Coulson, 1967
6	E	Coulson et al., 1965
6	S	Love, 1969
6	S	Olson, 1969
6	E	Silberman et al., 1962
6	E	Silberman et al., 1964
6	E/S	Wiviott, 1970

Trigonometry

1	S	Brown, 1970

2	S	Czarnec, 1973
2	S	Jackson, A., 1973
2	S	Penner, H. D., 1972
2	S	Podbels[illegible]k, 1973
2	S	Ritter, 1971
2	S	Szabo, 1970

Trigonometry (cont.)

2	S	Wallace, 1969
2	S	Zamboni, 1969

Calculus

1	S	Gavurin, 1971
1	S	Hubley and Maclay, 1970
1	S	Lackner, 1971
1	S	Lackner, 1972
2	S	Beougher, 1969
2	S	Churchman, 1973
2	S	Isaac, 1970
2	S	Lackner, 1969
2	S	McGannon, 1971
2	S	Pinker, 1969
2	S	Riggs, R. F., 1969
2	S	Wooldridge, 1972
6	S	Lackner, 1968

Other courses (secondary)

2	S	Beougher, 1969
2	S	Eirich, 1968
2	S	Gamble, 1966
2	S	Kieren, 1969
2	S	Linkhart, 1968
2	S	Long, 1969
2	S	Montgomery, W. G., 1969
2	S	Sipser, 1966
2	S	Tener, 1969

Other topics

1	E/S	Bassler, Hill, Ingle, and Sparks, 1971
1	S	Miller, 1969
2	E/S	Leskow, 1969
2	E/S	Riggle, 1968
4	E/S	Rollins, T. J., 1973
2	S	Becker, 1967
2	S	Boe, 1967
2	S	Brunner, R. B., 1972
2	S	Buethe, 1966
2	S	Davis, J. B., 1968
2	S	Gubrud, 1971
2	S	Hatz, 1966
2	S	Hershberger, 1971
2	S	Hollingshead, 1966
2	S	Jacobs, 1970
2	S	Johnson, A.F., 1968
2	S	Jordan, 1971
2	S	Keese, 1972
2	S	Kepner, 1971
2	S	King, D. T., 1972
2	S	Kort, 1971
2	S	Libeskind, 1971
2	S	Morgan, 1966
2	S	Nicely, 1970
2	S	Pang, P. H., 1969
2	S	Riggs, R. F., 1969
2	S	Scott, R. O., 1969
2	S	Shumway, 1970
4	S	Smith, J. L., 1964
2	S	Solheim, 1971
2	S	Swanson, 1973
2	S	Taylor, J. D., 1970
2	S	Tucker, J., 1970
2	S	Usiskin, 1970
2	S	Williams, J. F., 1966
2	S	Williams, K. E., 1969
2	S	Wixson, 1970

Textbooks

1	E	Callahan and Passi, 1972
3	E	Cruikshank, 1969
1	E	Heddens and Smith, 1964
1	E	Hicks, 1968
1	E	Klein, 1973
1	E	Lerch and Mangrum, 1965
1	E	Lyda and Robinson, 1964
1	E	Marksberry, McCarter, and Noyce, 1969

Textbooks (cont.)

1	E	Miller, 1964
1	E	Paige and Jennings, 1967
1	E	Reys and Knowles, 1968
1	E	Scott, 1966
1	E	Sherman and Belding, 1965
1	E	Stauffer, 1966

1	S	Gupta, 1969
1	S	Kulm, 1973
1	S	Nelson, 1965
1	S	Smith, 1969

2	E	Andrews, E. E., 1967
4	E	Banning, 1972
2	E	Brown, C. K., 1973
2	E	Browning, 1971
2	E	Butt, 1967
2	E	Covington, 1967
2	E	Dahle, 1970
2	E	Dain, 1967
2	E	Davis, P. H., 1972
2	E	Dilts, 1971
2	E	Ferguson, L. H., 1970
2	E	Futcher, C. F. W., 1966
4	E	Greenough, 1970
4	E	Grimes, 1971
2	E	Hausher, 1970
2	E	Hughes, E. M., 1968
2	E/S	Lohr, 1969
2	E	McConnell, 1967
2	E	Mowbray, 1971
2	E/S	Neatrour, 1969
2	E	Passi, 1970
4	E	Prock, 1971
2	E	Reed, M. K. S., 1966
2	E	Rudolph, W. B., 1970
2	E	Sibilia, 1967
2	E	Smith, Lee A., 1966
2	E	Stevens, 1966
2	E	Stevenson, E. F., 1971
2	E	Weinstein, P. S., 1973

2	S	Abeles, F., 1965
2	S	Ahmad, 1970
2	S	Bell, M. S., 1970
2	S	Blocker, 1968
2	S	Brown, L. H., 1970
2	S	Buchalter, 1969
2	S	Buckner, 1971
2	S	Bumby, 1973
2	S	Byham, 1970
2	S	Calloway, 1971
2	S	Chaing, 1972
2	S	Dahmus, 1968
2	S	Dixon, L. J., 1964
2	S	Elbrink, 1970
2	S	Findley, 1967
2	S	Ginther, 1965
2	S	Gupta, 1967
2	S	Heighton, 1973
2	E/S	Holz, 1973
2	S	Jacobs, 1970
2	S	Jay, 1973
2	S	Kaufmann, J. E., 1969
2	S	Kulm, 1971
2	S	Lorentz, 1971
2	S	Love, 1964
2	S	McLaughlin, J. P., 1970
2	S	Monk, 1966
2	S	Niceley, 1970
2	S	Palmer, 1968
2	S	Pruitt, R. L., 1969
2	S	Reeves, J. W., 1970
2	S	Roberts, G. H., 1966
2	S	Sooy, 1970
2	S	Stephenson, 1972
2	S	Tremel, 1964
2	S	Winzenread, 1970
2	S	Wunderlich, 1973
4	S	Yates, 1972

6	S	Austin, 1969
6	E	Dunlap et al., 1971
6	S	Gibbs and Brgoch, 1964
6	E	Kane and Holz, 1972
6	E	Mowbray and Seager, 1973
6	E	Rudolph and Kane, 1970
6	E/S	Shaw, 1967
6	E/S	ED 023 584

Workbooks

1	S	Lach, 1970

2	E/S	Frank, 1971

Workbooks (cont.)

2	S	Blazek, 1971
2	S	Lasswell, 1971

6	E	Beattie and Deichmann, 1972
6	S	Bushnell, 1966
6	E/S	Kellett, 1966

Manipulative devices, games

1	E	Armstrong, 1972
1	E	Beardslee, Gau, and Heimer, 1973
1	E/S	Brothers, 1973
1	E	Brownell, 1968
1	E	Callahan and Jacobson, 1967
1	E	Earhart, 1964
1	E	Fennema, 1972
5	E	Fennema, 1972
1	E	Gipson, 1971
1	E	Hollis, 1962
5	E/S	Kieren, 1969
1	E	Lerch and Mangrum, 1965
1	E/S	Lewis, 1970
1	E	Lucow, 1964
1	E	Moody, Abell, and Bausell, 1971
1	E	Nasca, 1966
1	E	Nicodemus, 1970
1	E	Passy, 1964
5	E	Reys, 1972
1	E	Ross, 1970
1	E	Schnur, 1969
1	E	Steffe, 1970
1	E	Trueblood, 1970

1	S	DeVries and Edwards, 1973
1	S	Higgins, 1970
1	S	Jamison, 1964
1	S	Jones, 1968

2	E	Atkinson, 1973
2	E/S	Bailey, J. M., 1973
2	E	Bisio, 1971
2	E	Bowen, J. J., 1970
2	E	Brown, C. K., 1973
2	E	Carmody, 1971
2	E	Clausen, 1972
2	E	Coltharp, 1969
2	E	Cooke, 1971
2	E	Crist, 1969
2	E	Crowder, A. B., 1966
2	E	Curry, 1971
2	E	Davidson, J. E., 1973
2	E	Downs, 1969
2	E	Dunlap, 1971
2	E	Ekman, 1967
2	E	Fedon, 1967
2	E	Fennema, 1970
2	E	Finch, 1972
2	E	Fortson, 1970
2	E	Green, G. A., 1970
2	E	Green, R. W., 1970
2	E	Harvin, 1965
2	E	Haynes, J. O., 1964
2	E	Hilliard, 1972
2	E	Hollis, 1965
2	E	Jones, R. S., 1971
2	E	Karlin, 1972
2	E	Knaupp, 1971
2	E	Lane, 1964
2	E	Lucas, 1967
2	E	McLeod, G. [illegible]., 1971
2	E	Nichols, E. J., 1972
2	E	Nickel, 1971
2	E	Paris, 1971
2	E/S	Phillips, D. G., 1968
2	E	Portis, 1973
2	E	Prater, 1968
2	E	Prindeville, 1972
2	E	Reavis, 1973
2	E	Ropes, 1973
2	E	Silbaugh, 1972
2	E/S	Sherer, 1968
2	E	Skipper, 1973
2	E	Tate, 1965
2	E	Toney, 1968
2	E	Trask, 1973
2	E	Trueblood, 1968
4	E	Turek, 1973
4	E	Wall, 1973
2	E	Weber, 1970
2	E	Weeks, G. M., 1971
4	E	Weisman, 1973
2	E	Wheeler, L. E., 1972
2	E	Wilkinson, J. D., 1971

Manipulative devices, games (cont.)

2	E	Williams, M. A., 1970
2	E	Wynroth, 1970

2	S	Beal, 1973
2	S	Branca, 1971
2	S	Burgess, 1970
2	S	Cech, 1970
2	S	Cheatham, 1970
2	S	Collins, K. M., 1971
2	S	Ebeid, 1964
2	S	Engel, 1967
2	S	Findley, 1967
2	S	Johnson, R. E., 1971
2	S	Igo, 1972
2	S	Kleckner, 1969
2	S	McMillian, 1973
2	S	Page, 1971
2	S	Purser, 1973
2	S	Rich, 1972
2	S	Schippert, 1965
2	S	Shoecroaft, 1972
2	S	Silbaugh, 1972
2	S	Stanford, 1970
2	S	Stocks, 1972
2	S	Waters, 1972
2	S	Wilkinson, G. G., 1971

6	S	Cech, 1970
6	E	Fennema, 1969
6	S	Higgins, 1969
6	E/S	King, 1973
6	E/S	Longstaff et al., 1968

Audio-visual devices

1	E	Murray, 1970
1	E	O'Bryan and Boersma, 1972
1	E	Schall, 1973
1	E	Stovall, 1969
1	E	Suppes and Ihrke, 1970
1	E	Suppes, Jerman, and Groen, 1966
1	E	Van Engen and Parr, 1969
1	E	Weaver, 1965
1	S	Bassler, Curry, Hall, and Mealy, 1971
3	S	Byrkit, 1970
1	S	Cech, 1972
1	S	Westley and Severin, 1965

2	E	Alford, 1971
2	E	Axton, 1970
2	E	Bolduc, 1970
2	E	Brown, C. K., 1973
2	E	Carrico, 1971
2	E	Cibbarelli, 1970
2	E/S	Durrance, 1965
2	E	Eudy, 1973
2	E	Finch, 1972
2	E	Fortson, 1970
2	E	Green, G. A., 1970
2	E	Green, R. W., 1970
2	E	Jones, R. C., 1972
2	E	Koch, R. R., 1971
2	E	Kratzer, 1972
2	E	Lutz, 1971
2	E	Miller, Daniel D., 1970
2	E	Miller, Donald D., 1970
2	E	Muckey, 1971
2	E	Nagel, 1970
4	E	Runion, 1973
2	E	Schall, 1970
2	E	Taylor, R. C., 1969
2	E/S	Warner, 1965
4	E	White, M. J. A., 1964
2	E	Wilkinson, J. D., 1971
2	E	Willis, 1973
4	E	Wilmoth, 1969

2	S	Al-Hadad, 1973
2	S	Beamish, 1968
4	S	Byrkit, 1968
2	S	Gaslin, 1972
2	S	Lenchner, 1972
2	S	Longbotham, 1969
2	S	Luttrell, 1971
2	S	Mastbaum, 1969
2	S	Mealy, 1971
2	S	Ritter, 1971
2	S	Robinson, F. E., 1969
2	S	Sekyra, 1969
4	S	Stilwell, K. J., 1972

6	S	Beberman and Van Horn, 1960
6	S	Church et al., 1964

Audio-visual devices (cont.)

6	S	Devitt, 1961
6	S	Ellis and Corum, 1969
6	S	Hickey et al., 1962
6	S	Keough and Burke, 1969
6	S	Miller et al., 1966
6	S	Tiemens, 1962

Programmed instruction

3	E	Bassler, 1966
1	E/S	Bassler, Hill, Ingle, and Sparks, 1971
1	E	Beamer and Lemke, 1973
1	E	Brager, 1970
5	E	Briggs and Angell, 1964
1	E	Crist, 1966
1	E	D'Augustine, 1964
1	E/S	D'Augustine, 1966
1	E	Denmark and Kalin, 1964
1	E	Dutton and Riggs, 1969
1	E	Fincher and Fillmer, 1965
1	E	Glaser, Reynolds, and Fullick, 1966
1	E	Greatsinger, 1968
1	E	Higgins and Rusch, 1965
1	E	Holt, 1971
1	E	Ingersoll, 1971
1	E	Jerman, 1973
1	E	Kaplan, 1969
1	E	Kaplan, 1970
3	E	King, 1969
5	E/S	King, 1970
1	E	Krich, 1964
5	E/S	Lackner, 1967
1	E/S	Meadowcroft, 1965
1	E	Miller, 1964
1	E	Phillips and Kane, 1973
1	E	Pyatte, 1969
1	E	Rainey and Kelley, 1967
1	E	Schall, 1973
1	E	Spagnoli, 1965
1	E	Traub, 1966
1	E	Traweek, 1964
5	E/S	Zoll, 1969

1	S	Ashbaugh, 1964
1	S	Beane, 1965
1	S	Belcastro, 1966a
1	S	Belcastro, 1966b
1	S	Biddle, 1967
1	S	Bivens, 1964
1	S	Blackman and Capobianco, 1965
1	S	Brinkmann, 1966
1	S	Brown, 1970
1	S	Brown, 1967
1	S	Campbell, 1964
1	S	Carpenter and Fillmer, 1965
1	S	Cartwright, 1971
1	S	Devine, 1968
1	S	Easterday and Easterday, 1968
1	S	Flynn, 1969
1	S	Flynn and Mauser, 1971
1	S	Gawronski, 1972
1	S	Henderson and Rollins, 1967
1	S	Holtan, 1964
1	S	Jones, 1968
1	S	Jordy, 1964
1	S	Lach, 1970
1	S	Lackner, 1971
1	S	Lackner, 1972
1	S	Lucas, 1967
1	S	Meadowcroft, 1965
1	S	Meconi, 1967
1	S	Miller, 1969
1	S	Niedermeyer, Brown, and Sulzen, 1969
1	S	Randolph, 1964
1	S	Scandura and Durnin, 1968
1	S	Shaver and White, 1966
1	S	Sneider, 1968

2	E	Austin, G. R., 1966
2	E	Bracht, 1970
2	E/S	D'Augustine, 1964
2	E	Fogle, 1972
2	E	Frayer, 1970
2	E	Geisert, 1972
2	E	Gerlach, 1965
2	E	Goebel, 1966
2	E	Greatsinger, 1967
2	E	Gryde, 1971
2	E	Hillerby, 1971
2	E	Hillman, 1964
2	E	Hoover, 1970

Programmed instruction (cont.)

2	E	Jencks, 1969
2	E	Johnson, G. F., 1967
2	E	King, R. W., 1967
2	E	Krauser, 1965
2	E	Lane, 1964
2	E	Leary, 1972
2	E	Levin, A. I., 1968
2	E	McIntyre, 1965
2	E	McMillan, 1971
4	E	Montemuro, 1971
2	E	Mueller, 1969
2	E	Northcutt, 1964
2	E	Nowak, S. M., 1969
2	E	Oner, 1972
2	E	Phillips, E. R., 1972
2	E	Potts, 1969
2	E	Puglisi, 1971
2	E	Pyatte, 1968
2	E	Reavis, 1973
4	E	Reed, J. F., 1971
2	E/S	Reichert, 1971
2	E	Richards, K. B., 1971
2	E	Riggs, C. W., 1967
2	E	Schall, 1970
2	E	Shnur, 1970
2	E	Smith, S. E., 1968
2	E	Stevens, 1966
2	E	Swyers, 1970
2	E	Tack, 1972
2	E	Taylor, R. C., 1969
2	E	Thompson, R. B., 1965
4	E/S	Todd, R. M., 1966
2	E	Traweek, 1964
2	E/S	Treffinger, 1969
2	E	Walbesser, 1967
2	E	Williamson, 1972
2	E	Wilson, J. A., 1968
2	E	Zediker, 1972
2	S	Becker, 1967
2	S	Behr, 1967
2	S	Beste, 1964
2	S	Biddle, 1967
2	S	Blair, 1964
2	S	Bobier, 1964
2	S	Buethe, 1966
2	S	Callister, 1966
2	S	Carry, 1968
2	S	Chapel, 1966
2	S	Craig, 1973
2	S	Davis, F. W., 1967
2	S	Davis, J. B., 1968
2	S	Dean, 1968
2	S	Devine, 1967
2	S	Eigen, 1964
2	S	Eldredge, 1966
2	S	Fejfar, 1964
2	S	Ferderbar, 1965
2	S	Fishell, 1964
2	S	Hale, W. T., 1965
2	S	Hanson, L. E., 1967
2	S	Hegstrom, 1972
2	S	Hirsch, 1973
2	S	Jenkins, 1968
2	S	Johnson, D. C., 1966
2	S	Johnston, A. E., 1969
2	S	Kepner, 1971
2	S	Kern, 1973
2	S	Lackner, 1969
2	S	MacPherson, 1967
2	S	Meadowcroft, 1965
2	S	Meconi, 1967
2	S	Morgan, 1966
2	S	Neuhouser, 1965
2	S	Newmark, 1970
2	S	Oates, 1966
2	S	Onorevoie, 1971
2	S	Ostheller, 1971
2	S	Ottina, 1964
2	S	Pang, P. H., 1969
2	S	Patterson, 1970
2	S	Peters, G. E., 1964
2	S	Rafiq, 1965
2	S	Retzer, 1967
2	S	Robson, 1966
2	S	Rollins, J. H., 1966
2	S	Roughead, 1967
2	S	Roy, 1971
2	S	Salisbury, 1966
2	S	Scott, A. W., 1970
2	S	Scott, R. O., 1969
2	S	Sharlow, 1971
2	S	Spencer, R. Y., 1972
2	S	Tanner, G. L., 1966
2	S	Wallender, 1972
2	S	Webb, 1972
2	S	Wiebe, 1966
2	S	Winzenread, 1970
2	S	Wriggle, 1965
6	S	Archer and Woodlen, 1967
6	E/S	Bassler, 1968

Programmed instruction (cont.)

6	S	Briggs and Campbell, 1961
6	S	Brown, 1964
6	S	Campbell et al., 1963
6	S	Coulson, 1964
6	S	Coulson, 1967
6	S	Coulson et al., 1965
6	S	Davis and Banning, 1968
6	E/S	Della-Piana et al., 1965
6	S	Gibbs and Brgoch, 1964
6	E	Glaser et al., 1966
6	S	Hagan, 1967
6	E	Jacobs, 1968
6	S S	Kinzer and Worcester, 1965
6	S	Lackner, 1968
6	S	Morrow, 1965
6	S	Paulson, 1964
6	S	Raymond, 1964
6	S	Rosen and Stolurow, 1964
6	E	Schutz et al., 1964
6	S	Silberman et al., 1962
6	E	Silberman et al., 1964
6	S	Sjogren, 1964
6	S	Spencer and Briggs, 1972
6	S	ED 026 184

Computer-aided instruction

2	E	Clover, 1972
2	E	Ferguson, R. L., 1970
2	E/S	Kriewall, 1970

2	S	Hutcheson, 1973
2	S	Jurick, 1972
2	S	Rosenbaum, 1971
2	S	Young, R. M., 1972

6	E	Fisher, 1973
6	E	Jamison et al., 1971
6	E	Mathews, 1972

CAI: tutorial

1	E	Farris, 1973
1	E	Fejfar, 1969
1	E	Hirschbuhl, 1973
1	E	Hopkins, L. V., 1973
1	E	Hostetler, 1973
1	E	Jerman, 1970
1	E	Klein, 1973
3	E	Riedesel and Suydam, 1967
1	E	Sawada, 1973
1	E	Suppes and Ihrke, 1967
1	E	Suppes and Ihrke, 1970
1	E	Suppes, Jerman, and Groen, 1966
5	E	Vinsonhaler and Boss, 1972

1	S	Bowers, 1973
1	S	Crawford, 1970
1	S	Gay, 1973
1	S	Hess and Tenezakis, 1973
1	S	Keats and Hansen, 1972
1	S	Paquette, 1973
1	S	Smith, 1973

2	E/S	Barnes, O. D., 1971
2	E	Buechele, 1972
2	E	Carruth, 1971
2	E	Davies, 1972
2	E	Farris, 1971
2	E	Hirschbuhl, 1972
2	E	Hopkins, L. V., 1972
2	E	Hostetler, 1971
2	E/S	Ingle, 1973
2	E	Kanes, 1971
2	E/S	Lester, 1973
2	E	Nagel, 1970
2	E	Sawada, 1972
2	E	Whitcomb, 1972
2	E	Yens, 1973

2	S	Bishop, 1971
2	S	Bowers, 1972
2	S	Brod, 1972
2	S	Bunch, 1973
2	S	Cole, W. L., 1971
2	S	Confer, 1971
2	S	Dennis, 1969
2	S	Durall, 1972

CAI: tutorial (cont.)

2	S	Gay, 1971
2	S	Long, 1969
2	S	Melaragno, 1967
2	S	O'Connell, W. B., 1973
2	S	Ostheller, 1971
2	S	Ottina, 1964
2	S	Shaw, 1968
2	S	Smith, I. A., 1972

6	E	Abramson and Weiner, 1971
6	S	Coulson et al., 1965
6	S	Gay, 1969
6	S	Love, 1969
6	E	Miller and Hess, 1972
6	S	Smith and Hess, 1972
6	E	Street, 1972
6	E	Suppes, 1973
6	E	Taylor et al., 1972

CAI: non-tutorial

1	S	Alspaugh, 1971
1	S	Buchman, 1969
1	S	Hatfield and Kieren, 1972
1	S	Werner, 1970

2	E	Dansereau, 1969
4	E/S	DeLong, 1973
2	E	Finch, 1972
2	E	Folk, 1973
2	E	Lee, 1972
2	E	Loftus, 1971
2	E	Milner, 1973

2	S	Bishop, 1971
2	S	Boyd, 1973
2	S	Durall, 1972
2	S	Earle, H. F., 1973
2	S	Fisher, M. E., 1973
2	S	Foster, T. E., 1973
2	S	Gumm, 1971
2	S	Hatfield, 1970
2	S	Herceg, 1973
2	S	Hoffman, I. J., 1971
2	S	Jhin, 1972
2	S	Johnson, R. E., 1971
2	S	Katz, 1971
2	S	Kieren, 1969
2	S	King, D. T., 1972
2	S	Pack, 1971
2	S	Ronan, 1971
2	S	Rudolph, E. L., 1972
2	S	Wallace, 1969
2	S	Washburn, 1970
2	S	West, A. S.W., 1970
2	S	Wilkinson, A., 1973

6	E	Heimer et al., 1971
6	E	Milner, 1973
6	E/S	Richardson, 1968

Readability and vocabulary

5	E/S	Aiken, 1971a
5	E/S	Aiken, 1971b
5	E/S	Aiken, 1972
1	E	Balow, 1964
1	E	Dow, 1967
5	E/S	Earp, 1971
1	E	Heddens and Smith, 1964
1	E	Long and Henderson, 1965
1	E	Lyda and Duncan, 1967
1	E	Olander and Ehmer, 1971
1	E	Silverstein, Auger, and Krudis, 1964
1	E	Smith, 1971
1	E	Smith and Heddens, 1964
1	E	Stauffer, 1966
1	E	Willmon, 1971

1	S	Call and Wiggin, 1966
1	S	Kulm, 1973
1	S	Posamentier, 1966
1	S	Smith, 1969

2	E	Bessant, 1972
2	E	Browning, 1971
2	E	Carter, H. R., 1972
2	E	Covington, 1967
2	E	Currey, 1966
2	E	Ehmer, 1970
2	E	Ferguson, L. H., 1970
2	E	Fortson, 1970
2	E	Kamins, 1971
2	E	Knight, G. M., 1971

Readability and vocabulary (cont.)

2	E	Krebs, 1970
2	E	Langston, 1964
2	E	Linville, 1970
2	E	McDonald, W. T., 1969
2	E/S	Mermelstein, J., 1964
2	E	Olesini, 1972
2	E/S	Peck, 1971
2	E	Reed, M. K. S., 1966
2	E	Stevenson, E. F., 1971
2	E	Thompson, E. N., 1968

2	S	Brunner, R. B., 1972
2	S	Bumby, 1973
2	S	Byrne, 1971
2	S	Earle, R. A., 1971
2	S	Greenwood, E. G., 1972
2	S	Gussett, 1971
2	S	Hater, 1970
2	S	Kulm, 1971
2	S	LeDuc, 1972
2	S	Lorentz, 1971
2	S	Root, 1964

6	E/S	Aiken, 1972
6	E	Byrne and Kane, 1971
6	S	Dramer, 1970
6	E	Harvin and Gilchrist, 1970
6	S	Hater and Kane, 1970
6	E	Kane and Holtz, 1972
6	S	Kulm, 1971
6	E	Rudolph, 1971
6	E	Rudolph and Kane, 1970
6	E/S	Shaw, 1967

Quantitative concepts in other subject areas

1	E	Brekke, Williams, and Harlow, 1973
1	E	Kolb, 1967
1	E	Lyda and Robinson, 1964
1	E	Stafford and Renner, 1971
1	E	Willmon, 1971
1	S	Cain, 1966
1	S	Higgins, 1970
1	S	Long and Herr, 1973
1	S	Parque, 1966

2	E	Axton, 1970
2	E	Carey, 1967
2	E	Coffia, 1971
2	E	Cottrell, 1968
2	E	deWeffer, 1973
2	E	Gray, W. L., 1970
2	E	Heatherley, 1972
2	E	Kolb, 1968
2	E	Langston, 1964
2	E	Mahoney, 1971
2	E	Norton, 1972
2	E	Stull, 1965
2	E	Wood, L. R., 1968

2	S	Abeles, S., 1967
2	S	Ackerson, 1966
2	S	Al-Hadad, 1973
2	S	Bedwell, 1966
2	S	Blocker, 1968
2	S	Buethe, 1966
2	S	Cain, R. W., 1965
2	S	Case, J. B., 1969
4	S	Crothamel, 1973
2	S	Garguilo, 1971
2	S	Glismann, 1968
2	S	Greenwood, E. G., 1972
2	S	Higgins, J. L., 1967
2	S	Kohler, 1966
2	S	Lawrence, 1971
2	S	Linton, 1973
2	S	McFee, 1968
2	S	Mullen, 1971
2	S	Myrick, 1970
2	S	Root, 1964
2	S	Wallace, 1969
2	S	Williams, K. E., 1969
2	S	Wixson, 1970

6	S	Case, 1970
6	S	Higgins, 1969
6	E	Smith, 1969

Developmental projects

3	E	Bassler, 1966
1	E	Dunkley, 1972
1	E	Grafft and Ruddell, 1968
5	E	Huntington, 1970
5	E	Rising, 1965
1	E/S	Romberg and Wilson, 1968
1	E	Scharf, 1971
1	E	Scott, 1965
1	E	Scott, 1967
1	E	Sloan and Pate, 1966
1	E	Weaver, 1965
1	E	Yeager and Lindvall, 1967
1	S	Brown, 1967
1	S	Cahen, Romberg, and Zwirner, 1970
1	S	Duncan, 1964
1	S	Easterday, 1964
1	S	Friebel, 1967
1	S	Gupta, 1969
1	S	Higgins, 1970
1	S	Nelson, 1965
5	S	Schlessinger and Helgeson, 1969
1	S	Small, Holtan, and Davis, 1967
1	S	Trent, Ray, and Zimmerman, 1972
1	S	Westley and Severin, 1965
1	S	Whitman, 1966
2	E	Abate, 1973
2	E	Arrants, 1973
2	E/S	Baughman, 1968
2	E	Boozer, 1971
2	E	Bradford, 1973
2	E	Brust, 1972
2	E	Clough, 1971
2	E/S	Crespy, 1970
2	E	Davis, 1972
4	E	DeRenzis, 1971
2	E	Fielder, 1972
2	E	Finch, 1972
2	E	Gaskill, E. A., 1971
2	E	Gibish, 1971
2	E	Grafft, 1966
2	E	Hamby, 1972
2	E	Harper, K. J., 1973
2	E	Holste, 1972
2	E	Kanes, 1971
2	E	Koch, R. R., 1971
4	E	McLeod, D. B., 1973
2	E	Moncrief, 1973
2	E	Montgomery, M. E., 1973
2	E	Muckey, 1971
2	E	Pate, 1964
2	E/S	Phelps, 1964
2	E	Sherman, D. A., 1972
2	E	Smith, 1973
2	E	Thomas, B. B., 1972
2	E	Verheul, 1972
4	E	Vinskey, 1971
2	E/S	Woodall, 1967
2	S	Ackerson, 1966
2	S	Alsaqqar, 1965
2	S	Bell, J. A., 1971
2	S	Beninati, 1964
2	S	Bumby, 1973
2	S	Chandler, A. M., 1972
2	S	Chatterley, 1973
2	S	Clark, V. D., 1966
2	S	Cole, S. E., 1971
2	S	Dahmus, 1968
2	S	Danley, 1966
2	S	Davis, J. N., 1970
2	S	Demars, 1972
2	S	Dirr, 1967
2	S	Dixon, L. J., 1964
2	S	Ebeid, 1964
4	S	Fey, 1969
2	S	Foust, 1969
2	S	Priebel, 1965
2	S	Ginther, 1965
2	S	Glaser, 1970
2	S	Herriot, 1968
2	S	Hoban, 1971
2	S	Howard, F. H., 1969
2	S	Ikeda, 1965
2	S	Johnson, A. F., 1968
2	S	Johnson, D. C., 1966
2	S	Kilpatrick, 1968
2	S	Kim, 1972
2	S	Lockley, 1971
2	S	Maclay, 1969
2	S	McIntosh, 1965
2	S	McKinney, 1965
4	S	Moser, 1966
2	S	Neill, 1966
2	S	O'Connell, R. H., 1972
2	S	Osborn, 1966

Developmental projects (cont.)

2	S	Palmer, 1968
2	S	Pang, M. S. Y., 1968
2	S	Payne, H. I., 1965
4	S	Recker, 1966
2	S	Rising, 1966
2	S	Roberts, G. H., 1966
2	S	Romberg, 1968
2	S	Schippert, 1965
2	S	Sherrill, 1971
4	S	Smith, J. L., 1964
2	S	Smith, W. D., 1973
2	S	Snyder, 1967
2	S	Strowbridge, 1967
2	S	Thees, 1971
2	S	Thomas, H. L., 1970
2	S	Tremblay, 1973
2	S	Tremel, 1964
2	S	Wood, S. W., 1973
2	S	Ziebarth, 1964

6	S	Beberman and Van Horn, 1960
6	S	DeVenney, 1968
6	S	DeVenney, 1969
6	S	Ericksen and Ryan, 1966
6	S	Goldberg et al., 1966
6	S	Herriot, 1967
6	S	Higgins, 1969
6	S	Hively, 1968
6	S	Lipson, 1966
6	E	Marshall and Fischbach, 1972
6	E	McLeod, 1972
6	S	Rising and Ryan, 1966a
6	S	Rising and Ryan, 1966b
6	S	Rosen and Stolurow, 1964
6	S	Rosenbloom et al., 1966
6	S	Ryan, 1967-1968
6	S	Tatsuoka and Comley, 1964
6	S	Trent et al., 1972
6	S	Van Horn, 1966

Diagnosis

1	E	Roberts, 1968

2	E	Bronder, 1973
2	E/S	Gardner, T. P., 1972
2	E	Jones, R. C., 1972
2	E	Proger, 1969
2	E	Woodward, 1968

6	S	Lankford, 1972
6	S	Pro, 1972

Error analysis

1	S	Parque, 1966

2	E/S	Durrance, 1965
2	E	Ellis, L. C., 1972
2	E	Jennings, 1971
2	E	LeDoux, 1967
2	E	Offir, 1971
2	E	Poteet, 1971

2	S	Goldner, 1972
2	S	Hantjis, 1970

6	E/S	Beardslee, 1973
6	E	Beattie and Deichman, 1972

Diagnostic procedures

1	E	Zahorik, 1969

1	S	Noddings, 1969

2	E	Fennell, 1973
2	E	Jennings, 1971
2	E	Krautheim, 1972

2	S	Bobier, 1964
2	S	Scott, A. W., 1970
2	S	West, A. S. W., 1970

Remediation

1	E/S	Graubard, 1964
1	E	Harvey and Kyte, 1965
1	E	Higgins and Rusch, 1965
1	E	Hillman, 1970
1	E	McManis, 1970
1	E	Suppes, 1964
1	S	Crawford, 1970
1	S	Newman and Seiser, 1967
1	S	Nolen, Kunzelmann, and Haring, 1967
1	S	Parque, 1966
2	E	Ackerman, A., 1970
2	E/S	Anderson, R. M., 1970
2	E	Asbury, 1970
2	E	Bull, M. R., 1966
2	E/S	Child, 1968
2	E	Dunlap, 1971
2	E	Isenberg, 1972
2	E	McKee, 1970
4	E	Stowitschek, 1973
2	E	Warner, J. M. R., 1973
2	S	Andrews, H. B., 1971
2	S	Beougher, 1969
2	S	Durall, 1972
2	S	Fiel, 1973
2	S	Gerstein, 1971
2	S	Goldberg, 1971
2	S	Kuefler, 1973
2	S	Melaragno, 1967
2	S	Shaw, 1968
6	E/S	Fox and Weinberg, 1967
6	E	Gray, 1968
6	S	Hillson, 1967
6	S	Hogan and Horsfall, 1970
6	E	Kress and Johnson, 1967
6	S	Morrow, 1965
6	E	[illegible]lven and Hofman, 1970
6	E	Prince, 1967
6	E	Wolf et al., 1966
6	E/S	ED 016 733, 1967
6	E	ED 027 363, 1969
6	E	ED 027 947, 1968
6	E/S	ED 028 898, 1969
6	S	ED 033 186, 1968
6	E	ED 034 013, 1969
6	E/S	ED 038 468, 1969
6	E/S	ED 038 474, 1969

Low achiever, underachiever

1	E/S	Loughlin et al., 1965
1	E/S	Ross, 1964
1	E	Smith and Shaw, 1969
1	S	Broussard, Fields, and Reusswig, 1969
1	S	Cech, 1972
1	S	Easterday, 1964
1	S	Glavach and Stoner, 1970
1	S	Jones, 1968
1	S	Lerch and Kelly, 1966
1	S	Lewis, 1969
1	S	Nelson, 1965
1	S	Trent, Ray, and Zimmerman, 1972
1	S	Weiss, 1969
2	E	Devane, 1973
2	E	Gibish, 1971
2	E	Gray, T. M., 1973
2	E	Jones, D. J., 1972
2	E	Lewis, W. J., 1972
2	E	Mix, 1970
2	E	Schacht, 1967
2	E	Schilling, 1969
2	E/S	Sherer, 1968
2	E	Stern, 1972
2	S	Arulsigamoni, 1973
2	S	Baker, B. L., 1971
2	S	Beal, 1973
2	S	Beaton, 1967
2	S	Boyd, 1973
2	S	Bryson, 1972
2	S	Buchman, A. L., 1972
2	S	Burgess, 1970
2	S	Carroll, C. A., 1971
2	S	Cech, 1970
2	S	Cohen, M. S., 1971
2	S	Confer, 1971
2	S	Demars, 1972
2	S	Dreyfuss, 1969

Low achiever, underachiever (cont.)

2	S	Engel, 1967
2	S	Fenner, 1966
2	S	Fischer, E. C., 1968
2	S	Garguilo, 1971
2	S	Gaslin, 1972
2	S	King, D. T., 1972
2	S	Kleckner, 1969
2	S	Napier, 1971
2	S	O'Connell, R. H., 1972
2	S	O'Connell, W. B., 1973
2	S	Schwartz, 1972
2	S	Swanson, 1973
2	S	Tanner, G. L., 1966
2	S	Wiebe, 1966
6	S	DeVenney, 1968
6	S	DeVenney, 1969
6	S	Dramer, 1970
6	S	Ellis and Corum, 1969
6	S	Homme, 1965
6	S	Silberman et al., 1962
6	S	Skager, 1969
6	E	Small et al., 1966
6	E	ED 049 062, 1970

Slow learner

1	S	Jones, 1968
1	S	Lerch and Kelly, 1966
2	E	Beamer, R. H., 1970
2	E	Hatch, 1970
2	E	Lewis, W. E., 1973
2	S	Barnes, P. T., 1972
2	S	Blismann, 1968
2	S	Harrison, 1969
4	S	Haynes, J. O., 1970
2	S	Herriot, 1968
2	S	Mastbaum, 1969
2	S	Sederberg, 1964
2	S	Tupesis, 1973
2	S	Young, J. C., 1969
6	S	Herriot, 1967
6	S	Paulson, 1964
6	S	Trent et al, 1972
6	S	ED 049 045, 1969

Mentally retarded

1	E	Achenbach, 1973
1	E	Armstrong, 1972
1	E	Boersma et al., 1970
1	E	Brown, 1973
1	E	Callahan and Jacobson, 1967
1	E/S	Cawley and Goodman, 1968
5	E	Connolly, 1973
1	E	Edwards, Alley, and Snider, 1971
1	E	Goodstein et al., 1971
1	E/S	Graubard, 1964
1	E/S	Meyen and Hieronymus, 1970
5	E	Noffsinger and Dobbs, 1970
1	E	Rainey and Kelley, 1967
1	E	Ross, 1970
1	E/S	Schwartz and Shores, 1969
1	E	Silverstein, Auger, and Krudis, 1964
1	S	Blackman and Capobianco, 1965
1	S	Cartwright, 1971
1	S	Huber, 1965
1	S	Nolen, Kunzelmann, and Haring, 1967
2	E	Adams, L. J. H., 1971
2	E	Arrants, 1973
2	E/S	Bellamy, 1972
2	E	Berman, 1964
2	E	Bessant, 1972
2	E	Boland, 1972
2	E	Bonfield, 1969
2	E	Cochran, 1971
2	E	Crooks, 1972
2	E/S	Gardner, T. P., 1972
2	E	Greer, 1972
2	E/S	Gulick, 1973
2	E	Hoeltke, 1967
2	E	Johnson, G. F., 1967

Mentally retarded (cont.)

2	E	Krug, 1973
2	E	Langley, 1972
2	E	Lopata, 1973
2	E/S	Marchi, 1971
2	E	McDonald, N. L. H., 1971
2	E	McFarland, 1970
2	E	McGettigan, 1970
2	E	McIntyre, 1965
2	E	Melnick, 1973
2	E/S	Miller, C. K., 1970
2	E	O'Hare, 1966
2	E	Pace, 1967
2	E	Peterson, D. L., 1968
2	E	Pfaeffle, 1969
2	E	Pinegar, 1968
2	E	Pritchett, 1966
2	E	Quick, 1967
2	E	Regula, C. R., 1973
2	E	Reitz, 1970
4	E	Stowitscek, 1973
2	E	Swize, L. M., 1972
2	E	Tate, 1965
2	E	Tucker, R. C., 1971
2	E	Vitello, 1972
2	E	Zilisch, 1972

2	S	Chandler, A. M., 1972
2	S	Connolly, 1968
2	S	Deshpande, 1969
4	S	Elliott, 1971
2	S	Haile, 1973
2	S	Jenkins, 1968
2	S	Jones, J. V., 1972
2	S	O'Donnell, 1973
2	S	Stewart, 1970
2	S	Stocks, 1972
2	S	Wood, S. W., 1973

6	E	Bonfield, 1968
6	E/S	Camille, 1962
6	E	Cawley and Goodman, 1967
6	E/S	Colette, 1966
6	E	Mann, 1967
6	E/S	Owens and Cooney, 1972
6	E/S	Wooldridge, 1966

Tutoring

1	E	Bausell, Moody, and Walzl, 1972
1	E	Cicirelli, 1972
1	E	Klein and Niedermeyer, 1971
1	E	Moody, Bausell, and Jenkins, 1973
1	E/S	Schultz, 1972

2	E/S	Anderson, R. M., 1970
2	E	Brantley, 1971
2	E/S	Burrow, 1970
2	E	Carlson, R. T., 1973
2	E	Davis, E. E., 1973
2	E/S	Frank, 1971
2	E	Greenwood, C. R., 1973
2	E	Guarnaccia, 1973
2	E	Harris, V. W., 1973
2	E/S	Masterson, 1971
2	E	McCabe, 1973
2	E	Olsen, C. R., 1969
2	E	Penner, W. J., 1973
2	E	Prindeville, 1972
2	E	Putoff, 1973
2	E	Richer, 1973
2	E	Ronshausen, 1972
2	E	Schrag, 1972
2	E/S	Stainback, 1972

2	S	Arulsigamoni, 1973
2	S	Coker, H., 1969
2	S	Eklin, 1973
2	S	Ellis, D. H., 1971
4	S	Erb, 1972
2	S	Everett, 1972
2	S	Harrison, 1969
2	S	Linton, 1973

Enrichment

1	E	Namy, 1967
1	E	Rea and French, 1972
1	E	Schlinsog, 1968
1	E/S	Taylor, 1971

Enrichment (cont.)

1	S	Berman, 1965
1	S	Cromack, 1970
1	S	Flynn and Mauser, 1971
1	S	Kennedy and Walsh, 1965
5	S	Meconi, 1967
1	S	Meconi, 1967
1	S	Prouse, 1967
1	S	Whitman, 1966
2	E	Crabtree, 1966
2	E	Olsen, C. R., 1969
4	E	Ouellette, 1973
2	E	Zediker, 1972
2	S	Bronder, 1973
2	S	Cromack, 1966
2	S	Fischer, E. C., 1968
2	S	Higginbotham, 1972
2	S	Johnson, R. M., 1967
2	S	Johnston, H. D., 1971
2	S	Nuhfer, 1971
2	S	Pettis, 1971
2	S	Spikell, 1972
2	S	Thomas, B. G., 1972
6	S	Arends and Ford, 1964
6	S	Devitt, 1961
6	S	Goldberg et al., 1966
6	S	Herring, 1962

Overachiever

1	E/S	Loughlin et al., 1965
1	S	Degnan, 1967
2	S	Pearl, 1967
6	S	Silberman et al., 1962

Acceleration

1	E	Aftreth and MacEachern, 1964
1	E	Ivey, 1965
1	E	Jacobs, Berry, and Leinwohl, 1965
1	E	Klausmeier, 1964
1	E	Suppes, 1964
1	E	Suppes, 1966
1	E	Suppes and Ihrke, 1967
1	E	Suppes and Ihrke, 1970
1	S	Berman, 1965
1	S	Klausmeier and Wiersma, 1964
2	E/S	Burdick, 1970
2	E	Coker, J. M., 1965
2	E	Matlin, 1965
2	E	Reisman, 1969
2	E	Singh, 1970
2	S	Alam, 1969
2	S	Dezelle, 1966
2	S	Eberle, 1971
2	S	Fredstrom, 1965
2	S	Ludeman, 1970
6	S	Arends and Ford, 1964
6	S	Goldberg et al., 1966
6	E	Reisman, 1968

Grouping procedures

1	E	Balow and Curtin, 1966
1	E	Beamer and Lemke, 1973
1	E	Brewer, 1966
1	E	Crist, 1966
1	E	Graham, 1964
1	E	Hambourger, 1964
1	E/S	Hudgins and Smith, 1966
1	E	Jerman, 1973
3	E	King, 1969
1	E	Klausmeier, 1964
1	E	Price and Rosemeier, 1972
1	E	Redbird, 1964
1	E	Suppes and Ihrke, 1970
1	E	Turkett and Purser, 1972
1	S	Balow, 1964
1	S	Bierden, 1970
1	S	Easterday, 1964

Grouping procedures (cont.)

1	S	Johnson and Scriven, 1967
1	S	Lerch and Kelly, 1966
1	S	Willcutt, 1969a
1	S	Willcutt, 1969b
1	S	Wright, 1970
2	E	Abate, 1973
2	E	Arrants, 1973
2	E	Bartel, 1966
2	E	Bazik, 1973
2	E	Beamer, R. H., 1970
2	E	Boozer, 1971
2	E	Bradford, 1973
2	E	Brewer, E., 1964
2	E	Broussard, 1971
2	E	Brust, 1972
2	E	Clough, 1971
2	E	Deep, 1967
2	E	Dembo, 1969
2	E	Eddleman, 1971
2	E	Fielder, 1972
2	E	Fisher, V. L., 1967
2	E	Frase, 1971
2	E	Gaskill, E. A., 1971
2	E	Godde, 1973
2	E	Hamby, 1972
2	E	Hampton, P. F., 1968
2	E	Harper, K. J., 1973
2	E	Holste, 1972
2	E	Johnston, H. J., 1973
2	E	Kanes, 1971
2	E	Kissel, 1971
2	E/S	Kriewall, 1970
2	E	Malcom, 1973
4	E	McBride, 1971
2	E	Moncrief, 1973
2	E	Neujahr, 1971
2	E	Nyeste, 1973
2	E	Oles, 1972
2	E	Pond, 1973
2	E	Putbrese, 1972
2	E	Regula, C. R., 1973
2	E/S	Sanders, S. G., 1966
2	E	Scanlon, 1967
2	E	Schnur, 1970
2	E	Schrag, 1972
2	E	Singh, 1970
2	E	Smith, G. W., 1971
2	E	Stam, 1973
2	E	Stephens, L. S., 1972
2	E	Thomas, B. B., 1972
2	E	Tychsen, 1971
2	E	Verheul, 1972
2	E	Wadsworth, 1969
2	E	Wolff, B. R., 1969
2	E	Yeager, 1967
2	S	Adamson, 1972
2	S	Alam, 1969
2	S	Bachman, 1969
2	S	Bailey, H. P., 1968
2	S	Bailey, W. T., 1971
2	S	Baker, B. L., 1971
2	S	Bierden, 1969
2	S	Campbell, A. L., 1965
2	S	Chatterley, 1973
4	S	Cleminson, 1973
2	S	Coker, H., 1969
2	S	Crangle, 1971
2	S	Englert, 1972
2	S	Fernandez, 1972
2	S	Fremont, 1964
2	S	Harper, 1973
2	S	Herceg, 1973
2	S	Igo, 1972
2	S	Mortlock, 1970
2	S	Nix, 1970
2	S	Olson, F. C., 1971
2	S	Pearl, 1967
2	S	Penner, H. D., 1972
2	S	Ritter, 1971
2	S	Schaefer, W. A., 1972
2	S	Scott, A. W., 1970
2	S	Shull, 1967
2	S	Shumaker, 1973
2	S	Sinks, 1969
2	S	Snyder, 1967
2	S	Stiglmeier, L. M., 1973
4	S	Strickmeier, 1971
2	S	White, V. T., 1972
2	S	Wilkinson, G. G., 1971
2	S	Willcutt, 1967
2	S	Williams, P. H., 1971
2	S	Wood, S. W., 1973
2	S	Wright, R. E., 1965
6	E	Boozer and Lindvall, 1971
6	E	Hudgins and Smith, no date

Grouping procedures (cont.)

6	S	Love, 1969
6	S	Paulson, 1964

Physical, psychological, and/or social characteristics

5	E/S	Aiken, 1970
1	E	Brothers, 1973
1	E	Cleveland and Bosworth, 1967
1	E	Figurelli and Keller, 1972
1	E	Glavin et al., 1971
1	E/S	Graubard, 1964
1	E	Gray and Klaus, 1970
1	E	Henderson and Long, 1966
1	E	Hollos and Cowan, 1973
1	E	Klein and Niedermeyer, 1971
1	E	Koppitz, 1970
1	E	Leibowitz, 1966
1	E	Lessing, Zagorin, and Nelson, 1970
1	E/S	Lewis, 1970
1	E	Long and Henderson, 1965
1	E/S	Loughlin et al., 1965
1	E	Messer, 1972
1	E	Minde et al., 1971
1	E	Ramayya, 1972
1	E	Rea and Reys, 1971
1	E	Rosenfeld and Hilton, 1971
1	E	Rosner, 1973
1	E/S	Ross, 1964
1	E	Schroeder, 1965
1	E	Schnur, 1969
1	E	Singhal and Crago, 1971
1	E	Smith and Shaw, 1969
1	E	Stone and Rayley, 1964
1	E	Traweek, 1964
1	E	Weinstein, 1971
1	E	Zaslow, 1966
1	S	Anderson, 1971
1	S	Anderson and Johnson, 1971
1	S	Ayers, Bashaw, and Wash, 1969
1	S	Degnan, 1967
1	S	Flynn, 1969
1	S	Hess and Tenezakis, 1973
1	S	Hilton and Myers, 1967
1	S	Huber, 1965
1	S	Johnson and Anderson, 1964
1	S	Mann et al., 1970
1	S	Naylor and Gaudry, 1973
1	S	Nolen, Kunzelmann, and Haring, 1967
1	S	Osborne and Miele, 1969
1	S	Proger et al., 1971
1	S	Shaver and White, 1966
1	S	Silverblank, 1973
1	S	Stewart, Dole, and Harris, 1967
1	S	Szetela, 1973
1	S	White and Aaron, 1967
2	E	Ackerman, J., 1972
2	E	Albert, 1971
2	E	Alberti, 1971
2	E/S	Austin, G. F., 1973
2	E/S	Bellamy, 1972
2	E	Beman, 1972
2	E	Bracht, 1970
2	E	Burns, B. J., 1972
2	E	Bybee, 1973
2	E	Carri, 1973
2	E	Cary, 1965
2	E	Centrone, 1973
2	E	Chew, 1971
2	E	Davis, J. C., 1972
2	E	Dethmers, 1969
2	E	Dweek, 1972
2	E	Embrey, 1972
2	E	Flynn, 1971
2	E	Forhetz, 1971
2	E	Gambini, 1973
2	E	Geoghagan, 1971
2	E	Gray, C. A., 1971
2	E	Ham, 1971
2	E	Hand, C. R., 1969
2	E	Harris, G. R., 1968
2	E/S	Harte, 1967
2	E	Hayes, 1968
2	E/S	Hicks, J. S., 1969

Physical, psychological, and/or social characteristics (cont.)

2	E	Hillerby, 1971
2	E	Johnson, G. S., 1973
2	E	Jones, R. C., 1972
2	E	Karlin, 1972
2	E	Kew, 1972
2	E	Knight, C. W., 1969
2	E	Knox, 1966
2	E	Lanier, 1967
2	E/S	Lavos, 1966
2	E/S	Lawton, 1971
2	E	Marcum, 1969
2	E	Massarotti, 1972
2	E/S	McMahan, 1972
2	E	Michael, 1969
2	E	Montgomery, R. L., 1973
2	E/S	Morrison, G. A., 1973
2	E	Neufeld, 1968
2	E/S	Newberg, 1972
2	E	Norton, 1972
2	E	Oner, 1972
2	E	Phillips, W. D., 1964
2	E	Poggio, 1973
2	E	Polmatier, 1972
2	E	Rebhun, 1973
2	E	Richman, 1972
2	E	Rivera, H. N., 1971
2	E	Rivera, C. E., 1973
2	E	Ruby, 1973
2	E	Sams, 1969
2	E	Saperstein, 1972
2	E/S	Savells, 1971
2	E	Schrag, 1972
2	E	Seegmiller, 1972
2	E	Simmons, M. P., 1972
2	E	Smith, D. F., 1971
2	E	Stokes, 1971
2	E	Talton, 1973
2	E	Tillman, 1967
2	E	Weeden, 1972
2	E	Weinstein, H. G., 1971
2	E	Yonally, 1972

2	S	Beavers, 1970
2	S	Broomes, 1972
2	S	Buchman, A. L., 1972
2	S	Callister, 1966
2	S	Carlow, 1968
2	S	Choe, 1971
2	S	Clark, N. C., 1971
2	S	Costantino, 1969
2	S	Covey, 1973
2	S	Denoyer, 1971
2	S	Dezelle, 1966
2	S	Ferderbar, 1965
2	S	Fischer, E. C., 1968
4	S	Gallagher, R. P., 1968
2	S	Hampton, C. E., 1971
2	S	Hankins, B. A., 1971
2	S	Hanna, G. S., 1965
2	S	Haven, 1971
2	S	Hinds, 1972
2	S	Holmes, P. R., 1966
2	S	Igo, 1972
2	S	Johnson, R. M., 1967
2	S	Leach, 1971
2	S	Lewis, J. C., 1973
2	S	MacPherson, 1967
2	S	May, D. C., 1972
2	S	Miller, W. E., 1970
2	S	Morgan, 1966
2	S	Newstat, 1973
2	S	Podojil, 1972
2	S	Silverblank, 1971
2	S	Stacy, 1971
2	S	Stiglmeier, L. M., 1973
2	S	Swafford, 1970
2	S	Szetela, 1971
2	S	Tidwell, 1972
2	S	Zamboni, 1969

6	E/S	Aiken, 1971
6	E/S	Anderson and Johnson, 1968
6	S	Brill et al., 1969
6	E	Goodwin et al., 1965
6	E	Hewett et al., 1967
6	E	Jones et al., 1971
6	E/S	Karnes and Wollersheim, 1963
6	E	Kohen-Paz, 1969

Sex differences

1	E	Clark, 1967
1	E	Engle and Lerch, 1971
1	E	Heard, 1970
1	E	Jarvis, 1964
1	E/S	Loughlin et al., 1965

Sex differences (cont.)

1	E/S	Powell, O'Connor, and Parsley, 1964
1	E	Price and Rosemeier, 1972
1	E/S	Unkel, 1966
1	S	Cronin, 1967
1	S	Easterday and Easterday, 1968
1	S	Feldhusen, Treffinger, and Elias, 1970
1	S	Sheehan, 1968
1	S	Stewart, Dole, and Harris, 1967
1	S	Very and Iacono, 1970
2	E	Albert, 1971
2	E	Bobbe, 1971
2	E	Gilchrist, 1968
2	E	Jay, 1973
2	E/S	Kenny, 1973
2	E	Matthews, 1970
2	E	Nyeste, 1973
2	E	Poggio, 1973
2	E/S	Simmons, S. V., 1966
2	E	Smith, 1971
2	E/S	Unkel, 1966
2	S	Backman, M. E., 1973
2	S	Cragg, 1967
2	S	Cronin, R. E., 1968
2	S	Denoyer, 1971
2	S	Houston, 1969
2	S	Howell, E. N. , 1966
2	S	Howitz, 1966
2	S	Kohli, 1969
2	S	Koopman, 1964
2	S	Starkey, 1971
6	E/S	Fennema, 1973
6	S	Gay, 1969
6	E	Harris and Romberg, 1971
6	S	Haven, 1972

Socioeconomic differences

1	E	Anastasiow et al., 1970
5	E	Austin, Rogers, and Walbesser, 197s
1	E	Baker and Sullivan, 1970
1	E	Castaneda, 1968
1	E	Dunkley, 1965
1	E	Dutton, 1967
1	E	Evans, 1966
1	E	Goolsby and Frary, 1970
1	E	Haney and Hooper, 1973
1	E	Heitzman, 1970
1	E	Kaplan, 1969
1	E	Kaplan, 1970
1	E	Lehew, 1968
1	E/S	MacArthur and Mosychuk, 1966
1	E	Montague, 1964
1	E	Owens, 1972
1	E	Paschal, 1966
1	E	Perrodin and Snipes, 1966
1	E	Pitts, 1968
1	E	Plant and Southern, 1972
1	E/S	Schwartz and Shores, 1969
1	E	Snipes, 1966
1	E/S	Unkel, 1966
1	E	Zimmerman and Rosenthal, 1972
1	S	Harrison, 1969
1	S	Newman and Seiser, 1967
2	E	Adams, L. D., 1971
2	E	Albert, 1971
2	E	Al-Nasser, 1972
2	E	Asbury, 1970
2	E	Bass, 1971
2	E	Binkley, 1967
2	E	Broussard, 1971
2	E	Brudenell, 1970
2	E	Cain, M. A., 1971
2	E	Carson, 1972
2	E	Castaneda, 1968
2	E	Centrone, 1973
2	E	Cromie, 1972
2	E	Dellinger, 1972
2	E	DeShields, 1973
2	E	Dickerscheid, 1970
2	E	Divers, 1972
2	E	Eddleman, 1971
2	E	Francies, 1971
2	E	Gaudia, 1971
2	E	Green, R. W., 1970
2	E	Hall, E. L., 1967

Socioeconomic differences (cont.)

2	E	Haney, 1971
2	E	Hankins, D. D., 1969
2	E	Hatch, 1970
2	E	Hillerby, 1971
2	E	Hilliard, 1972
2	E	Hollander, 1968
2	E	Howard, V. G., 1970
2	E	Hutton, 1970
2	E	Isenberg, 1972
2	E	Johnson, R. T., 1970
2	E	Johnson, L.H., 1972
2	E	Kamins, 1971
2	E	Kaplan, 1968
2	E	Knight, G. M., 1971
2	E	Knowlden, 1967
2	E	Langley, 1972
2	E/S	Mahaffey, 1969
2	E	McCune, 1971
2	E	Miller, J. H., 1967
2	E	Muckey, 1971
2	E	Nowell, 1970
2	E	O'Neill, 1971
2	E	Ordonez, 1971
2	E	Owens, 1973
2	E	Pickering, C. T., 1970
2	E	Pittman, 1970
2	E/S	Prichard, 1970
2	E	Rivera, H. N., 1971
2	E	Samuels, 1972
2	E/S	Savells, 1971
2	E	Searle, 1968
2	E	Sherman, D. A., 1972
2	E	Silbaugh, 1972
2	E	Skypek, 1967
2	E	Smart, 1969
2	E	Smith, C. M., 1971
2	E	Stokes, 1971
2	E	Swize, M. T., 1972
2	E	Tack, 1972
2	E	Trevino, 1968
2	E/S	Unkel, 1966
2	E	Ward, P. E., 1970
2	E	Weber, 1970
2	E	Wheeler, O. V., 1972
2	E	Williams, L. L., 1973
2	E	Woodward, 1968

2	S	Backman, M. E., 1973
2	S	Covey, 1973
2	S	Cragg, 1967
2	S	Denoyer, 1971
2	S	Dreyfuss, 1969
2	S	Dunson, 1970
2	S	Goldner, 1972
2	S	Gussett, 1971
2	S	Houston, 1969
2	S	Howell, W. L., 1972
2	S	Johnson, R. M., 1967
2	S	Marazzi, 1972
2	S	Maytubby, 1972
2	S	Newstat, 1973
2	S	Pieters, 1969
2	S	Rasmussen, 1968
2	S	Rich, 1972
2	S	Schippert, 1965
2	S	Silbaugh, 1972
2	S	Winzenread, 1970

6	E	Bereiter et al., 1969
6	S	Gipson, 1971
6	E	Harper, 1970
6	S	Hillson, 1967
6	E	Jamison et al., 1971
6	S	Mayeske and Weinfeld, 1967
6	E	Owens, 1972
6	E	Pace, 1972
6	E	Smith, 1972
6	S	Tocco, 1971
6	E/S	ED 016 733, 1967
6	E	ED 027 362, 1969
6	S	ED 034 186, 1968
6	E	ED 035 013, 1969
6	E/S	ED 038 468, 1969
6	E/S	ED 038 474, 1969

Testing

1	E	Goodwin, 1966
1	E	Gray, 1966
1	E	Pace, 1966
1	E	Peisach and Wein, 1970
1	E	Romberg, 1968
1	E	Weaver, 1966

1	S	Linn, 1969

2	E	Braswell, 1970
2	E	Brudenell, 1970
2	E	Clason, 1969

Testing (cont.)

2	E	Dahle, 1970
2	E	Dull, 1970
2	E	Ferguson, 1970
2	E	Gallian, 1968
2	E	Graham, 1967
2	E	Gray, W. L., 1970
2	E	Hutton, 1970
2	E	Jonsson, 1966
2	E	Logiudice, 1970
2	E	Nelson, R. J., 1970
2	E	Richards, H. E., 1969
2	E	Santos, 1969
2	E	Smith, Lawrence A., 1965
2	E	Smith, Lee A., 1966
2	E	Wolff, R. F., 1969

2	S	Pro, 1972

6	E	Mathews, 1972
6	E/S	Williams and Jones, 1972

Analysis and validation of tests

1	E	Ashlock, 1968
3	E	Elsner, 1973
1	E	Flournoy, 1964
1	E	Flournoy, 1968
1	E	Foster, 1970
1	E	Hartlein, 1966
1	E	Henderson, 1968
1	E/S	Linn, 1969
1	E	Marjoribanks, 1971
1	E	Rea and Reys, 1970
1	E	Reys and Rea, 1970
1	E/S	Romberg and Wilson, 1968
1	E	Schwartz, 1969
1	E	Smith and Shaw, 1969
1	E	Wang, 1973

1	S	Baker, 1971
1	S	Bohrnstedt, Lambert, and Borgatta, 1971
1	S	Cahen et al., 1970
1	S	Caldwell et al., 1970
1	S	Coppedge and Hanna, 1971
1	S	Evans and Pike, 1973
1	S	Flournoy, 1964
1	S	Giles, 1964
1	S	Goolsby, 1971
1	S	Hanna, 1971
1	S	Hendrickson, 1971
1	S	Holly et al., 1973
1	S	Jeffery, 1969
1	S	Lenke, Bligh, and Kane, 1971
1	S	Paige, 1966
1	S	Postlethwaite, 1971
1	S	Renzulli and Shaw, 1971
1	S	Russell, 1969
1	S	Sabers and Feldt, 1968
3	S	Schmalz, 1973

2	E	Ashlock, 1966
2	E	Begum, 1970
2	E	Boyden, 1970
2	E	Callahan, L. G., 1967
2	E	Cotton, 1972
2	E/S	Crawford, D. H., 1965
2	E	Edwards, 1966
4	E	Elsner, 1973
2	E/S	Evans, E. W., 1965
2	E	Gerguson, N. U., 1967
2	E	Ferguson, R. L., 1970
2	E	Fisher, N. C., 1973
2	E	Garner, 1965
2	E	Gridley, 1971
2	E	Hall, C. T., 1971
2	E	Harder, 1972
2	E	Hartlein, 1966
2	E/S	Hiatt, 1971
2	E	Impara, 1973
2	E/S	Jansson, 1971
2	E	Jensen, O. W., 1967
2	E/S	Julian, 1972
2	E	Kaminsky, 1971
2	E/S	Kessinger, 1971
2	E	Kissel, 1971
2	E	Kuenz, 1973
2	E	Kwansa, 1973
2	E	Larson, 1972
2	E	LeDoux, 1967
2	E	LeJeune, 1968
2	E	Lewis, W. E., 1973
4	E	Little, 1972
2	E	Macready, 1972
2	E	Montague, 1972

Analysis and validation of tests (cont.)

2	E/S	Nealeigh, 1968
2	E	Oles, 1972
2	E	Peterson, G. D., 1973
2	E	Pyrczak, 1973
2	E	Rhodes, 1972
2	E	Riley, M. F., 1964
2	E/S	Roberge, 1969
2	E/S	Ryoti, 1973
2	E/S	Scott, D. M., 1971
2	E	Smith, G. W., 1971
2	E	Smith, R. F., 1972
2	E	Spilman, 1973
4	E	Strand, 1973
2	E	Troutman, 1972

2	S	Ali, 1967
2	S	Barova, 1967
2	S	Bernabei, 1967
2	S	Brunner, R. B., 1972
2	S	Cangelosi, 1972
2	S	Catanzano, 1972
4	S	Connelly, 1973
2	S	Connolly, 1968
4	S	Copley, 1971
2	S	Deshpande, 1969
2	S	Esser, 1970
2	S	Fallon, 1973
4	S	Fey, 1969
4	S	Flora, 1970
2	S	Futcher, W. G., 1970
2	S	Gupta, 1967
2	S	Ikeda, 1965
4	S	Kennedy, 1964
2	S	Laliberte, 1971
4	S	Lazar, 1972
2	S	DeDuc, 1972
2	S	Lockley, 1971
4	S	Massie, 1968
2	S	Miller, I. M., 1964
2	S	Namkin, 1966
2	S	Oakley, 1972
2	S	Pieters, 1969
2	S	Prouse, 1965
2	S	Pruzek, 1968
2	S	Romberg, 1968
2	S	Sabers, 1968
2	S	Sorivan, 1972
2	S	Walker, 1970
2	S	West, A. S. W., 1970
6	S	Cahen, Romberg, and Zwirner, 1970
6	E	Goolsby, 1969
6	E	Harris and Romberg, 1971
6	E	Kissel and Yeager, 1971
6	S	Mayeske and Weinfeld, 1967
6	S	Pinsky and Gorth, 1969
6	S	Rosen and Stolurow, 1964
6	E	Wheatley, 1972

Status testing

1	E/S	Dutton and Blum, 1968
1	E	Proger et al., 1971
1	E	Singhal and Crago, 1971
1	E	Ulrich, Louisell, and Wolfe, 1971
1	E	Von Brock, 1965

1	S	Beckmann, 1969
1	S	Beckmann, 1970
1	S	Brown, 1964
1	S	Greenfeld and Finkelstein, 1970
1	S	Hilton and Myers, 1967
1	S	Postlethwaite, 1969
1	S	Postlethwaite, 1971
1	S	Sat, 1968
1	S	Stewart, 1967

2	E	Archibald, 1968
2	E	Brunner, J. F., 1973
2	E	Burke, 1973
2	E	Crawford, D. H., 1965
2	E	DePasarell, 1971
2	E	Morrison, G. A., 1973
2	E	Poteet, 1971
2	E	Smith, 1971
2	E	Wolfe, M., 1973

2	S	Beavers, 1970
2	S	Cole, S. E., 1971
2	S	Leonard, H. A., 1967

Status testing (cont.)

6	S	Ellis, 1971
6	E	Ellis, 1972
6	E	Goodwin et al., 1965
6	E/S	Murphy, 1968

Achievement evaluation

1	E/S	Brothers, 1973
1	E	Cathcart and Liedtke, 1969
1	E/S	Cawley and Goodman, 1968
1	E	Chase, 1964
1	E	Clifford and Cleary, 1972
1	E	Dobbs and Neville, 1967
1	E	Earhart, 1964
1	E	Evans, 1966
1	E	Flournoy, 1967a
1	E	Flournoy, 1967b
1	E	Goodwin, 1966
1	E	Grafft and Ruddell, 1968
1	E	Heitzman, 1970
1	E	Hillman, 1970
1	E	Hungerman, 1967
1	E	Lessing, Zagorin, and Nelson, 1970
1	E	Lewy, 1972
1	E/S	Merenda and Jackson, 1968
1	E	Merz and Rutherford, 1972
1	E	Morris, Pestaner, and Nelson, 1967
1	E	Peper and Chansky, 1970
1	E	Perrodin and Snipes, 1966
1	E	Price, Prescott, and Hopkins, 1967
1	E	Pyatte, 1969
5	E/S	Romberg, 1969
1	E	Rosenfeld and Hilton, 1971
1	E	Rosner, 1973
1	E/S	Ross, 1964
1	E	Scott, 1965
1	E	Snipes, 1966
1	E	Stone and Rawley, 1964
1	E	Thompson and Perrodin, 1964
1	E/S	Unkel, 1966
1	E	Yeager and Lindvall, 1967

1	S	Anderson and Johnson, 1971
1	S	Christensen, 1968
1	S	Easterday, 1964
1	S	Jones and DeBlassie, 1971
1	S	Madden, 1968
1	S	Mann et al., 1970
1	S	Millman and Johnson, 1964
1	S	Very and Iacono, 1970
3	S	Wiersma, 1967
3	S	Wiersma, 1972

2	E	Ackerman, A., 1970
2	E/S	Amendola, 1973
2	E	Asbury, 1970
2	E/S	Beebe, 1973
2	E	Beggs, 1967
2	E/S	Botwin, 1966
2	E	Bradford, 1973
2	E	Braswell, 1970
2	E	Breen, 1966
2	E	Bybee, 1973
2	E	Cain, M. A., 1971
2	E	Cargill, 1973
2	E	Carruth, 1971
2	E/S	Child, 1968
2	E	Cobb, 1970
2	E	Cox, 1970
2	E/S	DeBlauw, 1973
2	E	Dethmers, 1969
2	E	Ehmer, 1970
2	E	Fullwood, 1969
2	E	Gallagher, H. B., 1965
2	E	Gridley, 1971
2	E	Hansen, B. P., 1966
2	E	Hayes, 1968
2	E/S	Holcombe, 1969
2	E	Hosey, 1973
2	E	Jantz, 1972
2	E	Jensen, L. R., 1973
2	E	Johnson, G. M., 1972
2	E	Jones, D. J., 1972
2	E	Juliar, 1969
2	E	Keane, D. F., 1969
2	E	Keating, 1968

Achievement evaluation (cont.)

2	E	Knight, C. W., 1969
2	E	Knox, 1966
2	E	Kosky, 1972
2	E	Krebs, 1970
2	E	Langston, 1964
2	E	Marcum, 1969
2	E	McCardle, 1966
2	E	McDaniel, W. P., 1972
2	E	Mehl, J. W., 1973
2	E	Meyer, 1970
2	E	Miller, Daniel D., 1970
2	E	Miller, J. H., 1967
2	E	Mitchell, C., 1973
2	E	Montgomery, R. L., 1973
2	E	Morrison, S. L., 1973
2	E	Pickering, C. T., 1970
2	E/S	Roberts, W. J., 1971
2	E	Rubin, 1968
2	E	Sanders, F. J., 1971
2	E	Schmatz, 1965
2	E	Snipes, 1964
2	E	Stahl, 1973
2	E	Stiglmeier, J. J., 1964
2	E	Stuart, 1967
2	E	Tismer, 1969
2	E	Wasden, 1971
2	E	Weston, 1969
2	E	Yeager, 1967
2	S	Brantly, 1971
2	S	DiPaolo, 1966
2	S	Gaskill, L. D., 1972
2	S	Hammongs, 1972
2	S	Harris, J. W., 1972
2	S	Kohler, 1966
2	S	Madden, 1966
2	S	Marazzi, 1972
2	S	Meeker, 1967
2	S	Mwaniki, 1972
2	S	Nowka, 1972
2	S	O'Donnell, 1973
2	S	Olson, A. H., 1973
2	S	Paul, 1973
2	S	Posamentier, 1973
2	S	Safransky, 1973
2	S	Schneider, 1970
2	S	Spickerman, 1970
2	S	Stacy, 1971
2	S	Weeks, R. T., 1973
6	S	Austin, 1969
6	E	Furno and Collins, 1967
6	E/S	Garms and Smith, 1969
6	S	Laliberte, 1966
6	S	Lockley, 1971
6	E	Moody et al., 1972
6	E	Smith, 1972

Achievement evaluation related to age

1	E	Brown, 1973
1	E	Clarke and Drowatzky, 1972
1	E	Estes and Combs, 1966
1	E/S	Meyen and Hieronymus, 1970
1	E	Scott and Lighthall, 1967
1	E	Suppes and Binford, 1965
1	E	Wozencraft, 1973
1	S	Austin and Prevost, 1972a
1	S	Austin and Prevost, 1972b
1	S	Cronin, 1967
1	S	Sheehan, 1968
2	E/S	Crawford, D. H., 1965
2	E	Gott, 1964
2	E	Ilika, 1964
2	E	Loughlin, 1966
2	E	Morrell, 1970
2	E	Simpson, 1971
2	S	Denoyer, 1971
2	S	Whyte, R. A., 1972

Achievement evaluation related to intelligence

5	E/S	Aiken, 1971a
5	E/S	Aiken, 1971b
1	E	Brown, 1973

Achievement evaluation related to intelligence (cont.)

1	E	Feldhusen, Thurston, and Benning, 1967
1	E	Flournoy, 1968
1	E	Freyberg, 1966
1	E/S	Graubard, 1964
1	E	Jarvis, 1964
1	E	Keislar and Stern, 1970
1	S	Belcastro, 1966
1	S	Cain, 1966
1	S	Cronin, R. E., 1967
1	S	Giles, 1964
1	S	Jamison, 1964
2	E	Berman, 1964
2	E	Cary, 1965
2	E	Crowder, R. P., 1970
2	E	Egeland, 1966
2	E	Goode, 1972
2	E/S	Harte, 1967
2	E/S	Jacks, 1972
2	E	Johnson, G. S., 1973
2	E/S	Lavos, 1966
2	E	Lorance, 1966
2	E/S	Simmons, S. V., 1966
2	E/S	Sowder, 1970
2	E	Tillman, 1967
2	E	Williams, B. J. I., 1973
2	S	Bachman, 1969
2	S	Cronin, 1968
2	S	Haile, 1973
2	S	Houston, 1969
2	S	McLaughlin, J. P., 1970
2	S	Newmark, 1970
2	S	Robinson, F. F., 1969
2	S	Strowbridge, 1967
6	S	Campbell et al, 1963
6	S	Fitzgerald, 1965
6	E	Larson, 1972
6	E	Runyon, 1963

Achievement evaluation related to prediction

1	E	Kaufman and Kaufman, 1972
1	E/S	MacArthur and Mosychuk, 1966
1	S	Baker, 1972
1	S	Bohrnstedt, Lambert, and Borgatta, 1971
1	S	Caldwell et al., 1970
1	S	Coyle, 1967
1	S	Davidson and Gibney, 1969
1	S	Feldhusen, Treffinger, and Elias, 1970
1	S	Fremer, Coffman, and Taylor, 1968
1	S	Guilford, Hoepfner, and Peterson, 1965
1	S	Hall, 1971
1	S	Hanna, 1966a
5	S	Hanna, 1966b
1	S	Hanna, 1967
3	S	Hanna, 1968
1	S	Hanna and Lenke, 1970
1	S	Hanna, Bligh, and Lenke, 1970
1	S	Hanna, Bligh, Lenke, and Orleans, 1969
1	S	Hilton and Myers, 1967
1	S	Ivanoff, DeWane, and Praem, 1965
1	S	Katz and Norris, 1972
1	S	Mogull and Rosengarten, 1972
1	S	Posamentier, 1966
1	S	Sabers and Feldt, 1968
2	E	Boland, 1972
2	E	Bring, 1972
2	E	Buechele, 1972
2	E	Campbell, B. L., 1972
2	E	Hammond, R. K., 1972
4	E	Heisey, 1971
2	E/S	Kiehl, 1973
2	E	Kosky, 1972
2	E	Loughlin, 1966
2	E	Mardell, 1972
2	E/S	Mazur, 1969
4	E	McKnight, R. Q., 1972
4	E	Ouellette, 1973
2	E	Peper, 1971

Achievement evaluation related to prediction (cont.)

2	E	Perry, 1967
2	E	Poggio, 1973
2	E	Smith, G. E., 1973
4	E	Temple, 1972
2	E/S	Unkel, 1966

2	S	Anglin, 1966
2	S	Babbott, 1964
2	S	Bailey, H. P., 1968
2	S	Bowen, C. W., 1969
2	S	Caldwell, 1970
2	S	Collins, F. E., 1968
4	S	Crothamel, 1973
2	S	Davidson, W. W., 1969
2	S	Dirr, 1967
2	S	Farley, 1969
2	S	Fenner, 1966
2	S	Hall, L. T., 1970
2	S	Hanson, R. B., 1972
4	S	Heisey, 1966
2	S	Holly, 1971
2	S	House, 1973
2	S	Johnson, D. A., 1972
2	S	Kohli, 1969
2	S	Kuenz, 1973
2	S	Laliberte, 1971
2	S	Lewis, V.C., 1969
2	S	Lovett, 1969
2	S	Ludeman, 1970
4	S	Lyng, 1967
2	S	Maclay, 1969
2	S	Marazzi, 1972
2	S	Mars. 1970
2	S	McCabe, 1973
2	S	Roach, 1967
2	S	Shull, 1967
2	S	Strahler, 1973
2	S	Strowbridge, 1967
2	S	Tucker, J., 1970
4	S	Watson, 1970

6	E	Bonfield, 1968
6	S	Malinen, 1969
6	S	Pinsky and Gorth, 1969
6	S	Tocco, 1971
6	S	Van Horn, 1966

Effect of parental knowledge

1	E	Lessing, Zagorin, and Nelson, 1970
1	E	Maertens and Johnston, 1972

1	S	Bachman, 1970
1	S	Baker, 1972
1	S	Duncan, 1964
1	S	Harrison, 1969
1	S	Hill, 1967
1	S	Levine, 1972

2	E	Bull, M. R., 1966
2	E	Cain, M. A., 1971
2	E	Cox, 1970
2	E	Gosciewski, 1970
4	E	Hamburg, 1972
2	E	Higdon, G. H., 1973
2	E/S	Levine, G. I., 1973
2	E	Mayes, 1966
2	E	Mehl, J. W., 1973
2	E	Reavis, 1973
2	E/S	Savells, 1971
2	E	Weeden, 1972
2	E	Weinstein, H. G., 1971

2	S	Beaton, 1967
2	S	Birr, 1969
2	S	Burbank, 1970
2	S	Hipwood, 1969

6	E	Buchanan et al., 1969
6	S	Tocco, 1971

Effect of teacher background

1	E	Brager, 1970
1	E	Brophy, 1973
1	E	Ediger, 1965
1	E	Jose and Cody, 1971
1	E	Mendels and Flanders, 1973
1	E	Norris, 1969
1	E	Peper and Chansky, 1970
1	E	Phillips, 1973
1	E	Ruddell and Brown, 1964
1	E/S	Schultz, 1972
1	E	Shim, 1965

Effect of teacher background (cont.)

1	E	Whittington and Lawler, 1971
1	S	Baker, 1972
1	S	Bledsoe, Brown, and Strickland, 1971
1	S	Brandenburg, 1967
1	S	Houston and Bentzen, 1969
1	S	White and Aaron, 1967
2	E	Arnold, R. D., 1967
2	E	Atwood, 1971
2	E/S	Benner, 1971
2	E	Brager, 1969
2	E	Caezza, 1970
2	E	Deighan, 1971
2	E	Diedrich, 1970
2	E	Gardner, H. F., 1970
2	E	Gardner, J. W., 1973
2	E	Godgart, 1965
2	E	Gosciewski, 1970
2	E	Holloway, 1969
2	E	Hunkler, 1969
2	E	Hurst, 1968
2	E	James, J. A. C., 1973
2	E	Keane, D. F., 1969
2	E	Lamanna, 1969
2	E	Lampela, 1966
2	E	Laskaris, 1972
2	E/S	Mahaffey, 1969
2	E	Mahan, J. M., 1972
2	E	Manning, 1972
2	E	McKinstry, 1964
2	E	Moody, 1968
2	E	Moore, R.E., 1965
2	E	Norris, 1969
2	E	Nowell, 1970
4	E	Otillar, 1973
2	E	Raeihle, 1972
2	E/S	Rouse, 1968
2	E	Rutherford, J. A., 1968
2	E	Schloff, 1973
2	E	Sherman, D. A., 1972
2	E	Singleton, 1972
2	E	Sloan, 1970
2	E	Smith, D. F., 1971
4	E	Stowitschek, 1973
2	E	Van de Walle, 1973
2	E	Wesselman, 1970
2	E	Woods, D. P., 1972
2	E	Young, J. H., 1970
2	S	Bachman, 1969
2	S	Birr, 1969
2	S	Blazek, 1971
2	S	Byars, 1971
2	S	Carr, D. B., 1972
2	S	Costantino, 1969
2	S	Gregory, 1972
2	S	Hipwood, 1969
4	S	Hummel, 1973
2	S	Ikeda, 1965
2	S	Kester, 1969
2	S	Koch, D. R., 1972
2	S	Lichter, 1964
4	S	Miller, E. J., 1971
2	S	Neill, 1966
2	S	Nowka, 1972
2	S	Paul, 1973
2	S	Peskin, 1966
2	S	Phillips, R. B., 1970
2	S	Piatt, 1970
2	S	Pro, 1972
2	S	Purcell, J. E., 1972
2	S	Skvarcius, 1972
2	S	Smith, W. R., 1965
2	S	Soeteber, 1970
2	S	Wess, 1970
2	S	Williams, P. H., 1971
4	S	Zeddies, 1972
6	S	Beberman and Van Horn, 1960
6	S	Begle, 1972
6	E	Dwight et al., 1966
6	E	Fisher, 1973
6	S	Gregory, 1972
6	S	Hively, 1968
6	S	Rosenbloom et al., 1966
6	E	Van de Walle, 1973

Transfer

1	E	Beamer and Lemke, 1973
1	E	Gilmary, 1967
1	E	Gruen, 1965

Transfer (cont.)

1	E	Hirschbuhl, 1973
1	E	Kolb, 1967
1	E	Marshall, 1966
1	E	McNeil, 1965
1	E	Moody, Abell, and Bausell, 1971
1	E	Pyatte, 1969
1	E	Scandura, 1964
1	E	Wittrock and Keislar, 1965
1	E	Worthen, 1968a
1	E	Worthen, 1968b
1	E	Zeiler and Gardner, 1966
1	S	Bowers, 1973
1	S	Meconi, 1967
1	S	Paquette, 1973
1	S	Retzer and Henderson, 1967
1	S	Scandura and Durnin, 1968
2	E	Diedrich, 1970
2	E	Hirschbuhl, 1972
2	E	Putoff, 1973
2	E	Pyatte, 1968
2	E	Rousseau, 1972
2	E	Scott, J. A., 1971
2	E	Smith, S. E., 1968
2	S	Bowers, 1972
2	S	Smith, W. D., 1973
6	E	Lipson, 1966
6	S	Retzer, 1969
6	S	Scandura, 1970

Retention

1	E	Gray, 1965
1	E	Krich, 1964
1	E	Kurtz, 1973
1	E/S	Meadowcroft, 1965
1	E	Moody, Abell, and Bausell, 1971
1	E/S	Otto, 1965
1	E	Pigge, 1966
5	E	Riedesel, 1971
1	E	Romberg and Shepler, 1973
1	E	Scott, 1967
1	E	Shuster and Pigge, 1965
1	E/S	Sowder, 1971
1	E	Wittrock and Kieslar, 1965
1	E	Worthen, 1968a
1	E	Worthen, 1968b
1	S	Meconi, 1967
2	E/S	Botwin, 1966
2	E	Diedrich, 1970
2	E	Green, J. W., 1972
2	E	Lorance, 1966
2	E	Rousseau, 1972
2	E	Scott, 1971
2	E	Spencer, J. E., 1968
2	S	Kepner, 1971
2	S	Meeker, 1967
2	S	Paquette, 1972
6	S	Bourne, 1971
6	S	Gay, 1969
6	S	Nelson and Frayer, 1972

Generalization

1	E	Beardslee, Gau, and Heimer, 1973
1	E	Keislar and Stern, 1970
1	E	Kyte and Fornwalt, 1967
1	E	Strauss and Langer 1970
1	E	Tagatz, Layman, and Needham, 1970
1	S S	Henderson and Rollins, 1967
1	S	Jeffery, 1969
1	S	Retzer and Henderson, 1967
1	E/S	Scandura, Woodward, and Lee, 1967

Generalization (cont.)

2	E	Brumbaugh, D. K., 1970
2	E/S	Sowder, 1970
2	S	Crowcroft, 1973
2	S	Retzer, 1967
2	S	Rollins, J. H., 1966
6	E	Lipson, 1966
6	S	Retzer, 1969
6	E	Sowder, 1972

Thought processes

1	E	Achenbach, 1973
5	E/S	Aiken, 1973
1	E	Beilin and Gillman, 1967
1	E	Bennett and Walker, 1971
1	E	Callahan and Passi, 1972
1	E	Cathcart and Liedtke, 1969
1	E	Daehler, 1970
1	E	Darnell and Bourne, 1970
1	E	Elkind, Anagnostopoulous, and Malone, 1970
1	E/S	Feldhusen et al., 1971
1	E	Fennema, 1972
1	E	Ginsberg, 1969
1	E	Harris, Schaller, and Mitler, 1970
5	E/S	Heimer, 1969
5	E/S	Kieren, 1969
5	E/S	King, 1970
1	E	Lewis, 1966
1	E	Long and Henderson, 1965
5	E	McGannon, 1972
1 1	E	Merz and Rutherford, 1972
1	E	Nicodemus, 1970
1	E	Nolan and Pendarvis, 1970
1	E	Phillips and Kane, 1973
1	E	Potter and Levy, 1968
1	E	Pyatte, 1969
1	E	Rimoldi, Aghi, and Burder, 1968
1	E	Roberge, 1970
1	E	Schnur, 1969
1	E	Siegel and McBurney, 1970
1	E/S	Sowder, 1971
1	E/S	Stafford, 1972
1	E	Suppes, 1964
1	E	Suppes, 1966
1	E	Suppes, 1967
1	E	Tagatz, Layman, and Needham, 1970
1	E	Wang, 1973
5	E	White, 1973
1	E	Wilson, 1967
1	E	Yeager and Lindvall, 1967
1	E	Zimmerman and Rosenthal, 1972
5	S	Bittinger, 1968
1	S	Bowers, 1973
1	S	Branca and Kilpatrick, 1972
1	S	Campbell, 1964
1	S	Collis, 1971
1	S	Gawronski, 1972
1	S	Gay, 1973
1	S	Jeffery, 1969
1	S	Kennedy, Eliot, and Krulee, 1970
1	S	Kennedy and Walsh, 1965
1	S	Meconi, 1967
1	S	Meeker and Meyers, 1971
1	S	Moore and Cain, 1968
1	S	Niedermeyer, Brown, and Sulzen, 1969
1	S	Peterson et al., 1973
1	S	Price, 1967
1	S	Prouse, 1967
1	S	Romberg and Wilson, 1973
5	S	Rosskopf, 1968
1	S	Scandura, 1966
1	S	Scandura, 1966
1	S	Shumway, 1971
4	E	Albig, 1973
2	E	Barrish, 1971
2	E/S	Baughman, 1968
2	E	Beardslee, 1973
2	E	Blaeser, 1973
2	E	Bodden, 1972
2	E	Borgen, 1971
2	E	Bracht, 1970
2	E	Braxton, 1973
2	E	Buchanan, A. D., 1972
2	E	Burron, 1972
2	E	Carey, 1967
2	E	Carlisle, 1969
2	E	Cochran, 1971

Thought processes (cont.)

2	E	Coyle, 1969
2	E	Dansereau, 1969
2	E	Darnell, 1969
2	E/S	Delidow, 1970
2	E	Dorman, 1969
2	E	Dyrli, 1968
2	E	Edgell, 1973
4	E	Eisenberg, 1971
2	E	Elfner, 1972
2	E/S	Evans, E. W., 1965
2	E	Flaherty, 1973
2	E	Frehner, 1973
2	E/S	Gardiner, 1966
2	E	Gau, 1973
2	E	Geisert, 1972
2	E	Grafft, 1966
2	E/S	Hagele, 1973
2	E	Hegedus, 1972
2	E/S	Hiatt, 1971
2	E/S	Jansson, 1971
2	E	Jensen, L. R., 1973
2	E	Johnson, R. T., 1970
2	E	Johnson, H. C., 1973
2	E	Kew, 1972
2	E	Krauser, 1965
2	E	Lamon, 1969
2	E	McDonald, N. L. H., 1971
4	E	McLaughlin, J. A., 1973
2	E	Moxley, 1970
2	E	Offir, 1971
2	E	O'Hare, 1966
2	E	Pamboukian, 1972
2	E	Pendleton, 1973
2	E	Phillips, E. R., 1972
2	E	Qualls, 1970
2	E/S	Reichert, 1971
2	E	Remsted, 1969
2	E	Richards, L., 1972
2	E/S	Roberge, 1969
2	E	Roth, 1966
2	E	Russell, 1973
2	E	Schnur, 1970
2	E	Simpson, 1971
4	E	Smith, G. E., 1973
2	E/S	Spitler, 1971
2	E	Stam, 1973
2	E/S	Treffinger, 1969
2	E	Turner, J. S., 1973
2	E	Westbrook, 1966
2	E	Williams, B. J. I., 1973
2	E/S	Wiviott, 1971
2	S	Backman, M. E., 1973
2	S	Bailey, W. T., 1971
2	S	Ballew, 1966
2	S	Behr, 1967
2	S	Bowers, 1972
2	S	Branca, 1971
2	S	Bree, 1969
2	S	Broomes, 1972
2	S	Callister, 1966
2	S	Carnes, 1969
2	S	Christos, 1973
4	S	Cooney, 1970
2	S	Czarnec, 1973
2	S	Dirr, 1967
2	S	Dodson, 1971
2	S	Farrell, 1968
2	S	Gawronski, 1971
2	S	Gay, 1971
2	S	Gubrud, 1971
2	S	Harbeck, 1973
2	S	Hinds, 1972
2	S	Hodges, 1964
2	S	Holmes, P. R., 1966
2	S	Howell, E. N., 1966
2	S	Hrabi, 1968
2	S	Kriegsman, 1964
2	S	MacPherson, 1967
2	S	Manley, 1966
2	S	McGannon, 1971
2	S	McMillian, 1973
2	S	Meconi, 1967
2	S	Nelson, B. A., 1973
2	S	Oakley, 1972
2	S	Onorevole, 1971
2	S	Price, 1966
2	S	Prouse, 1965
2	S	Pullman, 1972
2	S	Ratzlaff, 1971
2	S	Roberts, G. H., 1966
2	S	Robinson, G. E., 1964
2	S	Scott, R. O., 1969
2	S	Shumway, 1970
2	S	Smith, H. K., 1968
2	S	Spencer, R. Y., 1972
2	S	Volchansky, 1969
2	S	Williams, C. L., 1967
2	S	Wolfe, L. R., 1970
2	S	Wunderlich, 1973
6	S	Branca, 1971
6	S	Collins, 1972
6	E	DuBois and Feierabend, 1959

Thought processes (cont.)

6	E	Frayer, 1973
6	S	Gawronski, 1971
6	E/S	Heimer et al., 1971
6	S	Kim and Leton, 1966
6	E	King, 1973
6	S	Mayeske and Weinfeld, 1967
6	E	Meyer, 1970
6	E	Nelson, 1972
6	E	Phillips and Kane, 1973
6	E/S	Restle, 1966
6	S	Rosen and Stolurow, 1964
6	S	Scandura, 1971
6	S	Travers et al., 1967
6	S	Van Horn, 1966
6	S	Webb, 1972
6	E/S	Wiviott, 1970

Motivation

1	E	Alschuler, 1969
1	E/S	Feldhusen et al, 1971
1	E	Leibowitz, 1966
1	E/S	Otto, 1965
1	E	Rea and French, 1972
1	E	Ross, 1970
1	S	Campbell, 1964
1	S	Christensen, 1968
1	S	Cromack, 1970
1	S	DeVries and Edwards, 1973
1	S	Gabor, 1972
1	S	Holtan, 1964
1	S	Russell, 1969
1	S	White and Aaron, 1967
2	E	Frumess, 1973
2	E	Hollander, 1968
2	E	Niland, 1969
2	E	Richman, 1972
2	E	Richter, 1972.
2	E	Robertshaw, 1972
2	E	Salzberg, 1973
2	E	Sharpe, 1973
2	E	Siu, 1973
2	E	Walken, 1969
2	E	Wynroth, 1970
2	E	Yens, 1973
2	S	Barcaski, 1970
2	S	Barnes, P. T., 1972
2	S	Cromack, 1966
2	S	Entin, 1968
2	S	Hake, 1973
2	S	Rising, 1966
6	E/S	Anderson and Johnson, 1968
6	S	Campbell et al., 1963
6	S	Edwards, DeVries, and Snyder, 1972
6	E	Fox and Jung, 1972
6	E	Miller and Hess, 1972
6	S	Rising and Ryan, 1966a
6	S	Rising and Ryan, 1966b
6	S	Tiemens, 1962
6	E	Wooldridge, 1966
6	E	ED 064 781, 1972
6	E	ED 064 782, 1972

Reinforcement

1	E	Fischbein, Pampu, and Manzat, 1970
1	E	McNeil
1	S	McManis, 1969
1	S	McManis, 1969b
2	E	Biot, 1970
2	E	Darnell, 1969
2	E	DeLucia, 1973
2	E	Gosciewski, 1970
2	E/S	Gulick, 1973
2	E	Harper, R. T., 1969
2	E	Krug, 1973
2	E	Lane, 1964
2	E	Levin, W. J., 1972
2	E	Mazzei, 1973
2	E	Oner, 1972
2	E	Richter, 1972
2	E	Robbins, 1973
2	E	Shea, 1973
2	E	Tack, 1972

Reinforcement (cont.)

2	E	Walken, 1969
2	E	Whitcomb, 1972
2	E	Witters, 1969
2	S	Roberts, G. H., 196-
2	S	Wallender, 1972
2	S	Wiebe, 1966

Knowledge of results

1	E	Hillman, 1969
1	E	Hillman, 1970
1	E	Maertens and Johnston, 1972
1	S	Beeson, 1973
1	S	Meconi, 1967
1	S	Piage, 1966
2	E	Austin, G. R., 1966
2	E	Devlin, 1972
2	E	Hillman, 1964
2	E	Leary, 1972
2	E	Miller, Daniel D., 1970
2	E	Miller, Donald D., 1970
2	E	Morrell, 1970
2	E	Walbesser, 1967
2	S	Beeson, 1970
2	S	Long, 1969
2	S	Ottina, 1964
2	S	Proctor, 1968
2	S	Shaw, 1968
6	S	Kinzer and Worcester, 1965
6	E	Rogers and Hopkins, 1971

Reinforcement: other procedures

1	E	Glavin et al., 1971
1	E	Heitzman, 1970
1	E	Holt, 1971
1	E	Johnston, Maertens, and Schooley, 1969
1	S	Bivens, 1964
1	S	Doherty and Wunderlich, 1968
1	S	Nolen, Kunzelmann, and Haring, 1967
2	E	Bramwell, 1970
2	E	Bull, M. R., 1966
2	E	Chew, 1971
2	E	Hall, W. H., 1971
2	E	Hansen, R. L., 1972
2	E	Lutz, 1971
2	E	Masek, 1970
2	E	McMillan, 1971
2	S	Andrews, H. B., 1971
2	S	Lackey, 1971
4	S	Moser, 1966
2	S	Starkey, 1971
4	S	Steinen, 1967
6	S	Paulson, 1964
6	E	ED 027 947, 1968

Piagetian concepts

1	E	Ahr and Youniss, 1970
1	E	Daehler, 1970
1	E	Darnell and Bourne, 1970
1	E	D'Mello and Willemsen, 1969
1	E	Haney and Hooper, 1973
1	E	Hollos and Cowan, 1973
1	E	Hopkins, 1973
5	E	Huntington, 1970
1	E	Josephina, 1964
1	E	Kaufman and Kaufman, 1972
5	E	Lovell, 1971
1	E	Miller, Boismier, and Hooks, 1969
5	E	Rosskopf, 1972
1	E	Sawada, 1973
1	E	Zeiler and Gardner, 1966
2	E/S	Andrejczak, 1972
2	E	Bonney, 1970
2	E	Brewer, B. A., 1970
2	E	Brodlie, 1966
2	E	Caraher, 1972

Piagetian concepts (cont.)

2	E	Carr, 1971
2	E	Dyrli, 1968
2	E	Etuk, 1967
2	E	Folk, 1972
2	E	Greenberg, 1970
2	E	Harper, R. T., 1969
2	E	Hilliard, 1972
2	E	Hopkins, L. W., 1972
2	E	Johnson, D. C., 1972
2	E	Larson, 1972
2	E	Murray, F. B., 1967
2	E	Nelson, R. J., 1970
2	E	Nowak, S. M., 1969
2	E	Overholt, 1965
2	E	Robinson, I. C., 1968
2	E	Rowland, 1973
2	E	Sawada, 1972
2	E	Schimmel, 1972
2	E	Sollee, 1969
2	E	Stahl, 1973
2	E	St. Clair, 1968
2	E	Stokes, 1971
2	E	Stommel, 1967
2	E	Stone, G. W. G., 1972
2	E	Thurner, 1970
2	E	Toussaint, 1973
2	E	Wheatley, 1968
2	E	Wickens, 1970
2	S	Johanson, 1972
2	S	Weeks, R. T., 1973
6	E	Carey and Steffe, 1968
6	E	Carpenter, 1971
6	E	Carpenter, 1972
6	E/S	Lovell, 1971
6	E	Stafford, 1971
6	E	Tanaka and Chittenden, 1970
6	E	Taranto and Mermelstein, 1972

Conservation

1	E	Achenbach, 1973
1	E	Beilen and Gillman, 1967
1	E	Brekke, Williams, and Harlow, 1973
1	E	Calhoun, 1971
1	E	Callahan and Passi, 1971
1	E	Cathcart, 1971
1	E	Gelman, 1972
1	E	Gelman and Weinberg, 1972
1	E	Goldschmid and Bentler, 1968
1	E	King, 1971
1	E	Lester and Klein, 1973
1	E	Little, 1972
1	E	Lloyd, 1971
1	E	Melnick, 1973
1	E	Miller, 1973
1	E	Miller, 1973
1	E	O'Bryan and Boersma, 1972
1	E	Pufall, Shaw, and Syrdal-Lasky, 1973
1	E	Schnall et al., 1972
1	E	Weisman and Safford, 1971
1	E	Williams, 1971
1	S	Nadel and Schoeppe, 1973
2	E	Beman, 1972
2	E	Berman, 1964
2	E	Boland, 1972
2	E	Camp, M. G., 1971
2	E	Carlson, R. D., 1972
2	E	Carr, D. H., 1971
2	E	Davidson, J. E., 1973
2	E	Davis, J. C., 1972
2	E	Gaudia, 1971
2	E	Haney, 1971
2	E	Harder, 1972
2	E	Heatherly, 1972
2	E	Henry, D. E., 1972
2	E	Kamps, 1971
2	E	Knifong, 1972
2	E	LeBlanc, 1968
2	E	Lesh, 1972
2	E	Mahoney, 1971
2	E/S	Marchi, 1971
2	E	Melnick, 1973
2	E	Miller, C. K., 1970
2	E	Needleman, 1970
2	E	Nichols, L. K., 1972
2	E/S	Opper, 1972
2	E	Phillips, J. D., 1973

Conservation (cont.)

2	E	Polamatier, 1972
2	E	Richer, 1973
2	E	Schenk, 1973
2	E	Seegmiller, 1972
2	E	Steffe, 1967
2	E	Stokes, 1971
2	E	Strauss, 1968
2	E	Swize, L. M., 1972
2	E	Swize, M. T., 1972
2	E	Taloumis, 1973
2	E	Victor, 1971
2	E	White, B. J., 1972
2	E	Wozniak, 1972
2	E	Yawkey, 1971

6	E	Howe, 1972
6	E	Johnson, 1972
6	E	Steffe and Carey, 1972
6	E	Wheatley, 1972

Conservation: development

1	E	Bat-Haee, 1971
1	E	Brace and Nelson, 1965
1	E	Brainerd and Brainerd, 1972
1	E	Brown, 1973
1	E	Craig, Love, and Olim, 1973
1	E	Elkind, Anagnostopoulou, and Malone, 1970
1	E	Estes and Combs, 1966
1	E	Figurelli and Keller, 1972
1	E	Ford, 1970
1	E	Goldschmid, 1968
1	E	Hooper, 1969
1	E	Kauffman, Payne, and Enemirger, 1971
1	E	Kurtz, 1966
1	E	McManis, 1969
1	E	McManis, 1970
1	E	Murray, 1969
1	E	O'Bryan and Boersma, 1971
1	E	Ohucha, 1971
1	E	Papalia and Hooper, 1971
1	E	Peisach and Wein, 1970
1	E	Pratoomraj and Johnson, 1966
1	E	Satterly, 1968
1	E	Schwartz and Scholnick, 1970
1	E	Shantz and Smock, 1966
1	E	Uzgiris, 1964
1	E/S	Verizzo, 1970

2	E	Anderson, D. G., 1971
2	E	Baker, E. A., 1971
2	E	Berglund, 1969
2	E/S	Brainerd, 1971
2	E	Carpenter, 1972
2	E	Chittenden, 1964
2	E	Eggleston, 1972
2	E	Gelman, 1967
2	E	George, 1970
2	E	Gruen, 1965
2	E	Ham, 1971
2	E	Hermeier, 1968
2	E	Hooper, 1971
2	E	Kamara, 1972
2	E	Kooistra, 1964
2	E	Krenzel, 1971
2	E	Lopata, 1973
2	E	McClain, 1973
2	E	McGettigan, 1970
2	E/S	Miller, P. A. H., 1971
2	E	Muktarian, 1967
2	E	Murray, J. P., 1970
2	E	Papalia, 1972
2	E	Richards, H. E., 1969
2	E	Rohr, 1973
2	E	Simpson, 1971
2	E	Skypek, 1967
2	E	Smart, 1969
2	E	Wagman, 1969
2	E	White, 1971

6	E	Pace, 1972

Conservation: training

1	E	Baker and Sullivan, 1970
1	E	Carlson, 1969
1	E	Feigenbaum, 1971

Conservation: training (cont.)

1	E	Feigenbaum and Sulkin, 1964
1	E	Fletcher, 1970
1	E	Gelman, 1969
1	E	Gottfried, 1969
1	E	Gruen, 1965
1	E	Halford and Fullerton, 1970
1	E	Harper, Steffe, and Van Engen, 1969
1	E	Larsen and Flavell, 1970
1	E	Murray, 1965
1	E	Murray, 1968
1	E	Murray, 1970a
1	E	Murray, 1970b
1	E	Overbeck and Schwartz, 1970
1	E	Pace, 1968
1	E	Peters, 1970a
1	E	Peters, 1970b
1	E	Roll, 1970
1	E	Rothenberg, 1969
1	E	Rothenberg and Orost, 1969
1	E	Schaeffer and Ellis, 1970
1	E	Silverman and Schneider, 1968
1	E	Smith, 1968
1	E	Sparks, Brown, and Bassler, 1970
1	E	Strauss and Langer, 1970
1	E	Wallach and Sprott, 1964
1	E	Wallach, Wall, and Anderson, 1967
1	E	Winer, 1968
1	E	Wohlwill, 1968
1	E	Yawkey, 1971
2	E	Biancovisco, 1971
2	E	Brison, 1965
2	E	Cahoon, 1971
2	E	Gruen, 1965
2	E	Gururaja, 1971
2	E	Hamilton, 1973
2	E	McClure, S. L., 1971
2	E	Mermelstein, E., 1965
2	E	Montemerlo, 1971
2	E	Parvand, 1972
2	E	Peters, D. L., 1969
2	E/S	Phillips, D. G., 1968
2	E	Reitz, 1970
2	E	Rose, 1971
2	E	Schwager, 1970
2	E	Steinbrecher, 1970
2	E	Stuck, 1967
2	E	Sweetland, 1969
2	E	Weiss, 1973
2	E	Young, B. S., 1969
6	E	Benzinger, 1970
6	E	Young, 1970

Conservation: relation to achievement

1	E	Freyberg, 1966
1	E	Goodnow and Bethon, 1966
1	E	Harper, Steffe, and Van Engen, 1969
1	E	Joyce and Joyce, 1964
1	E	Overholt, 1965
1	E	Sawada and Nelson, 1967
1	E	Steffe, 1968
2	E	Bozarth, 1968
2	E	Kaminsky, 1971

Transitivity

1	E	Braine, 1964
1	E/S	Glick and Wapner, 1968
1	E	O'Reilly and Steger, 1970
1	E	Sharples et al., 1968
1	E/S	Coon and Odom, 1968
2	E	Bailey, J. H., 1971
2	E	Cowan, 1964
2	E	Emrick, 1969
2	E	Gelman, 1967
2	E	Jones, J. N. J., 1969
2	E	Kaplan, 1968
2	E	Kooistra, 1964

Transitivity (cont.)

2	E	Trenary, 1972
2	E	Wadsworth, 1969

6	E	Divers and Steffe, 1971
6	E	Owens and Steffe, 1971

Classification and seriation

1	E	Caruso and Resnick, 1972
1	E/S	Ciborowski and Cole, 1972
1	E	Coxford, 1964
1	E/S	Denney, 1972
1	E	Elkind, 1964
1	E	Halford, 1969
1	E	Jacobs and Vandeventer, 1971
1	E	Kuhn, 1972
1	E	Little, 1972
1	E	MacKay, Fraser, and Ross, 1970
1	E	Parker, Rieff, and Sperr, 1971
1	E	Raven, 1967-68
1	E	Scott, 1973
1	E	Wei, Lavatelli, and Jones, 1971
1	E	Youssef and Guardo, 1972

2	E	Adams, L. D., 1971
2	E	Aldrich, 1970
2	E	Benson, 1967
2	E	Carr, D. H., 1971
2	E	Chiappetta, 1973
2	E	Elfner, 1972
2	E	Feldman, 1969
2	E	Gildemeister, 1973
2	E	Gordis, 1973
2	E	Gottlieb, 1973
2	E	Johnson, M. L., 1972
2	E	Langley, 1972
2	E	Lesh, 1972
2	E	McFarland, 1970
2	E	McLaughlin, L. M. J., 1972
2	E	Needleman, 1970
2	E	Otaala, 1971
2	E	Peglar, 1970
2	E	Prentice, 1964
2	E	Putoff, 1973
2	E	Robinson, V. H. B., 1970
2	E	Schafer, L. E., 1972
2	E	Stokes, 1971
2	E	Trenary, 1972
2	E	Whyte, L. A., 1970
2	E	Ziegenfuss, 1973
2	E	Zilisch, 1972

6	E	Schafer, 1973
6	E	Steffe, 1972

Piagetian concepts: other

1	E	Daehler, 1972
1	E	Davis, 1973
1	E	Goldberg, 1966
1	E	Halpern, 1965
1	E	Hoemann and Ross, 1971
1	E	O'Brien and Shapiro, 1968
1	E	Page, 1973
1	E	Pick and Pick, 1967
1	E	Rimoldi, Aghi, and Burder, 1968
1	E	Robinson, 1964
1	E	Rothenberg, 1969
1	E	Shapiro and O'Brien, 1970
1	E	Sheppard, 1973

1	S	Boe, 1968

2	E	Barragy, 1970
2	E	Bass, 1971
2	E/S	Brainerd, 1971
2	E	Cowan, P. A., 1964
2	E/S	Davis, E. J., 1970
2	E	Divers, 1972
2	E	Esty, 1971
2	E/S	Fetzer, 1972
2	E/S	Gardiner, 1966
2	E/S	Golledge, 1966
2	E	Griffiths, 1971
2	E	Hughes, F. P., 1973
2	E/S	Kidder, 1973
2	E	Kosanovich, 1972

Piagetian concepts: other (cont.)

2	E	LaCrosse, 1967
2	E/S	Leskow, 1969
2	E	Lindenbaum, 1969
2	E	Needleman, 1970
2	E	Nickel, 1971
2	E	Otaala, 1971
2	E/S	Palow, 1970
2	E	Roll, 1969
2	E	Shantz, 1966
2	E	Simmons, M. P., 1972
2	E	Vitello, 1972
2	S	Boe, 1967
2	S	Farrell, 1968
6	S	Boe, 1966
6	E	Weinstein, 1970

Pre-service

3	E	Creswell, 1967
4	E	Brenton, 1969
4	E	Brumbaugh, F. L., 1969
4	E	Buckeye, 1968
4	E	Cruikshank, 1969
4	E	Dettmers, 1970
4	E	Eicher, 1970
4	E	Gibbons, 1968
4	E	Gilbert, 1966
4	E	Warnke, 1969
4	E	Whipkey, 1970
4	S	Kennedy, 1964

Pre-service: competency levels

3	E	Behr, 1970
3	E	Creswell, 1964
3	E	Dutton, 1965
3	E	Fisher, 1967
3	E/S	Fisher, 1968
3	E	Gibney, Ginther, and Pigge, 1970
3	E	Hardgrove and Jacobson, 1964
3	E	Martin, 1967-68
3	E	Phillips, 1968
3	E	Porterfield, 1965
3	E	Reys, 1968a
3	E	Reys, 1968b
3	E	Skypek, 1965
3	E	Smith, 1967
3	S	Burnett and MacMinn, 1966
3	S	Hanna, 1968
1	S	Peterson, et al., 1973
3	S	Wiersma, 1967
3	S	Wiersma, 1972
4	E	Ames, 1972
2	E/S	Anttonen, 1968
4	E	Bailey, H. L., 1970
4	E	Banning, 1972
4	E	Carroll, E. M., 1965
4	E	Engelhardt, 1973
4	E	Greabell, 1970
4	E	Haggard, 1971
4	E	Higdon, D. W., 1973
4	E	Hurd, 1968
4	E	Jensen, O. W., 1967
4	E	Koeckeritz, 1971
4	E	Konkle, 1969
4	E/S	Martin, B. L., 1967
4	E	Masalski, 1970
4	E	McNerney, 1970
4	E	Morford, 1970
2	E/S	Olsen, C. W., 1969
4	E	Prock, 1971
4	E	Shawer, 1969
4	E	Strain, 1965
2	E	Thompson, R. B., 1965
4	E	Trine, 1966
4	E	White, M. J. A., 1964
4	E	Williams, R. C., 1966
4	E	Withnell, 1968
2	S	Bishop, 1971
4	S	Cook, C. V., 1970
4	S	Dixon, B. G., 1968
4	S	Massie, 1968
4	S	Pruitt, R., 1964
4	S	Smith, 1964
6	E	Deichmann and Beattie, 1972
6	E	Watson et al., 1973

Pre-service: preparation procedures

3	E	Bassler, 1966
3	E	CUPM, 1967
3	E	Cruickshank, 1969
3	E	Dutton, 1966
3	E	Dutton and Cheney, 1964
3	E/S	Goff, 1968
3	E	Hicks and Perrodin, 1967
3	E	Inskeep, 1968
3	E	King, 1969
3	E	Lilge, 1973
3	E	Moody and Wheatley, 1969
3	E	Pigge and Brune, 1969
3	E	Reys, 1967
3	E	Riedesel and Suydam, 1967
3	E	Sassenrath and Welch, 1968
3	E	Sherrill, 1973
3	E	Weaver, 1966

3	S	Bompart, 1970
5	S	Jones and Coxford, 1964
3	S	Kneitz, 1971
5	S	Pikaart and Hicks, 1967
3	S	Shafer, 1969
3	S	Wong, 1970

4	E	Abshire, 1973
4	E	Ames, 1972
4	E	Banning, 1972
4	E	Barnard, 1973
4	E	Bassler, 1966
4	E	Batker, 1972
4	E	Baur, 1971
4	E	Bazik, 1973
4	E	Boonstra, 1970
4	E	Campbell, W. L., 1971
4	E	Casebeer, 1968
4	E	Cleminson, 1973
4	E	Cook, J. M., 1970
4	E	Coughlin, 1969
4	E	Deatsman, 1971
4	E	DeLong, 1973
4	E	Dockweiler, 1971
4	E	Eisenberg, 1971
4	E	Emery, 1971
4	E	Estes, 1971
4	E	Ferguson, F.F., 1973
4	E	Fisher, N. C., 1973
4	E	Fithian, 1972
4	E	Fitzgerald, 1972
4	E	Fleischmann, 1971
4	E	Foster, K. R., 1971
4	E	Fowler, 1973
4	E	Gannon, 1973
4	E	Garnett, 1969
4	E	Garrison, 1973
4	E	Grimes, 1971
4	E	Grunwald, 1970
4	E	Haukebo, 1967
4	E	Heintz, 1971
4	E	Heisey, 1966
4	E	Hendrickson, 1970
4	E	Hogg, 1968
4	E	Kilman, 1971
4	E	Knodel, 1971
4	E	Leitch, 1973
4	E	Leonard, W. A., 1973
4	E	Little, 1972
4	E	Mahaffy, 1972
4	E	Mainville, 1972
4	E	Mallory, 1969
4	E	Martau, 1973
4	E	Martin, J. F., 1972
4	E	McBride. 1971
4	E	McCoy, 1972
4	E	McHenry, 1971
4	E	McKeen, 1971
4	E	McKnight, R. Q., 1972
4	E	McLaughlin, J. A., 1973
4	E	Merrick, 1972
4	E	Moorhouse, 1971
4	E	Nelson, R. S. R., 1973
4	E	Northey, 1967
4	E	Ouellette, 1973
4	E	Pethel, 1967
4	E	Pond, 1973
4	E	Postman, 1971
4	E	Prather, 1971
4	E	Ray, 1967
4	E	Reed, J. F., 1971
4	E	Reys, 1967
4	E	Richard, 1971
4	E/S	Rollins, T. J., 1973
4	E	Russell, 1973
4	E	Schmalz, 1972
4	E	Schneck, 1972
4	E	Schultz, 1972
4	E	Shakrani, 1973

Pre-service: preparation procedures (cont.)

4	E	Sheofee, 1971
4	E	Skipper, 1973
4	E	Smith, C. W., 1971
4	E	Smith, E. M. R., 1971
4	E	Smith, G. E., 1973
4	E/S	Stiles, 1972
4	E	Stochl, 1964
4	E	Thoyre, 1971
4	E	Turek, 1973
4	E	Weddle, 1972
4	E	Weisman, 1973
4	E	White, M. J. A., 1964
4	E	Wickes, 1968
4	E	Wiesen, 1970
4	E	Wilmoth, 1969
4	E	Wilson, J. M., 1973
4	E	Wolff, H. L., 1970
4	E	Young, N. E., 1969

4	S	Adhikary, 1973
4	S	Allen, 1971
4	S	Barbeau, 1969
4	S	Bennett, 1971
4	S	Berg, 1965
2	S	Bishop, 1971
4	S	Bompart, 1968
4	S	Bradley, B. T., 1971
4	S	Calloway, 1971
4	S	Carter, J. C., 1968
4	S	Chavier, 1965
4	S	Coblentz, 1971
4	S	Copley, 1971
4	S	Erb, 1972
4	S	Flora, 1970
4	S	Graening, 1972
4	S	Howe, 1967
4	S	Howell, D. L., 1969
4	S	Knight, L. E., 1972
4	S	Lazar, 1972
4	S	Lipson, 1972
4	S	Moser, 1966
4	S	Podbelsek, 1973
4	S	Prather, 1971
4	S	Runion, 1973
4	S	Shafer, 1967
4	S	Shouk, 1966
4	S	Smith, J. L., 1964
4	S	Steinen, 1967
4	S	Stephens, H. W., 1965
4	S	Stilwell, K. J., 1972
4	S	Von Kuster, 1972
4	S	Wong, 1969
4	S	Young, J. L., 1972

6	E/S	Cooney, 1971
6	S	Davison and Patrick, 1963
6	E	Dossey and Henderson, 1972
6	E	Sowder, 1972
6	E	Thoyre, 1970
6	E	Unkel, 1971

Pre-service: attitudes

3	E	Adams and Von Brock, 1967
3	E	Collier, 1972
3	E	Gibney, Ginther, and Pigge, 1970
3	E	Hunkler and Quast, 1972
3	E	Kane, 1968
3	E	Litwiller, 1970
3	E	Reys and Delon, 1968
3	E	Smith, 1964
3	E	Wardrop, 1972

4	E	Beattie, 1970
4	E	Collier, 1970
4	E	Connelly, 1973
4	E	Donnelly, 1972
4	E	Early, J. E., 1970
4	E	Erickson, 1970
4	E	Garrison, 1973
4	E	Gee, 1964
4	E	Higdon, 1973
4	E	Hilton, D. W., 1970
4	E	Leake, 1970
4	E	Litwiller, 1968
4	E	McNerney, 1970
4	E	Purcell, W. J., 1965
4	E	Roberts, F. M., 1970
4	E	Shatkin, 1969
4	E	Taylor, W. T., 1971
4	E	Temple, 1972
4	E	Wardrop, 1970
4	E	Weisman, 1973
4	E	White, M. J. A., 1964
4	E	Wickes, 1968
4	E	Wilson, J. M., 1973

Pre-service: attitudes (cont.)

4	S	Graening, 1972
4	S	Stilwell, K. J., 1972

Pre-service: characteristics

3	S	Cooney and Henderson, 1972
3	S	Flora, 1972
4	E	Albig, 1973
4	E	Mahan, E. A., 1971
4	E	McLaughlin, J. A., 1973
4	E	Robold, 1965
4	S	Flora, 1970
4	S	Fors, 1969
4	S	Kennedy, 1964
4	S	Moser, 1966
4	S	Shirk, 1973
4	S	Story, 1973
6	E	Shumway, 1973
6	E	Smith, 1973
6	E	Sowder, 1973
6	S	Travers and Knifong, 1971

In-service

3	E	Moody and Wheatley, 1969
4	E	Brenton, 1969
4	E	Buck, 1968
4	E	Chase, 1968
4	E	Clarkson, 1969
4	E	Dossett, 1965
4	E	Foley, 1966
4	E	Green, G. F., 1968
4	E	Greenough, 1970
4	E	Griffin, 1967
4	E	Grimsley, 1969
2	E	Mahan, J. M., 1972
4	E	Reid, 1970
2	E	Wesselman, 1970
2	S	Harding, 1969
4	S	Kennedy, 1964

In-service: competency levels

3	E	Gibney, Ginther, and Pigge, 1970a
3	E	Gibney, Ginther, and Pigge, 1970b
3	E	Harper, 1964
3	E	Kenney, 1965
3	E	Kipps, 1968
3	E	Melson, 1965
3	E	Porterfield, 1965
3	E	Reys, 1967
3	E	Weaver, 1966a
3	E	Weaver, 1966b
3	S	Allen, 1971
3	S	Leake, 1972
3	S	Lyng, 1968
3	S	Reys, Kerr, and Alspaugh, 1969
4	E	Callahan, L. G., 1967
4	E	Dickens, 1966
4	E	Greabell, 1970
4	E	Hammond, H. R., 1965
4	E	Higdon, D. W., 1973
4	E	Keith, 1971
4	E	Koeckeritz, 1971
4	E/S	Martin, B. L., 1967
4	E	Prock, 1971
2	E	Qualls, 1970
2	E	Raeihle, 1972
4	E	Williams, R. C., 1966
2	E	Woods, D. P., 1972
4	S	Alspaugh, 1966
4	S	Annis, 1966
4	S	Bradshaw, 1968
4	S	Cook, 1970
4	S	Haigh, 1970
4	S	Lyng, 1967
4	S	Massie, 1968
4	S	Naramore, 1969
4	S	Pruitt, 1964
4	S	Recker, 1966
4	S	Regula, W. E., 1965
4	S	Watson, 1970
4	S	Womack, 1972
6	E/S	Dye, 1966
6	E/S	Easterday, 1967
6	S	Gregory, 1972

In-service: procedures

3	E	Bartel, 1973
3	E	Brown, 1965
3	E	Creswell, 1967
3	E	Dutton and Cheney, 1964
3	E	Dutton and Hammond, 1966
3	E	Dwight, 1965
3	E	Gibney, Ginther, and Pigge, 1970
3	E/S	Goff, 1968
1	E	Hicks, 1968
3	E	Hunkler, 1971a
3	E	Hunkler, 1971b
3	E	Kennedy and Alves, 1964
3	E	Lightner and Gilman, 1971
1	E	Norris, 1969
3	E	Robold, 1966
3	E	Sherrill, 1971
3	E	Todd, 1966
3	E	Whitman, 1966

3	S	Allen, 1971
3	S	Bompart, 1970
1	S	Brandenburg, 1967
3	S	Byrkit, 1971
3	S	Kneitz, 1971
3	S	Reys, Kerr, and Alspaugh, 1969
5	S	Schlessinger and Helgeson, 1969

4	E	Abshire, 1973
2	E	Atwood, 1971
4	E	Beamer, J. E., 1971
4	E	Beers, 1968
4	E/S	Clark, J. F., 1968
4	E	Dickens, 1966
4	E	Dockweiler, 1971
4	E	Foisy, 1971
4	E	Grimes, 1971
4	E	Hammond, H. R., 1965
4	E	Hand, E. F., 1967
2	E/S	Hanna, J. E., 1966
4	E	Hicks, R. C., 1967
2	E	Holloway, 1969
4	E	James, J. A. C.,1973
4	E	Kindle, 1972
2	E	Lazarus, 1972
4	E	Lindell, 1967
4	E	Lindsay, 1966
2	E/S	Mahaffey, 1969
2	E	Manning, 1972
4	E	Martau, 1973
4	E	McLeod, J. A., 1965
4	E	McLeod, D. B., 1973
4	E	Montemuro, 1971
4	E	Murphy, 1972
2	E	Neville, 1972
2	E	Norris, 1969
4	E	Nunley, 1965
4	E	Otillar, 1973
4	E	Perkins, 1968
2	E	Schloff, 1973
2	E	Singleton, 1972
4	E	Stowitscek, 1973
4	E	Sweetser, 1969
4	E/S	Todd, R. M., 1966
4	E/S	Vanaman, 1968
4	E/S	Wade, 1969
4	E	Wall, 1973
4	E	Weddle, 1972
2	E/S	Weise, 1967

4	S	Barbeau, 1969
4	S	Bompart, 1968
4	S	Bradberry, 1967
4	S	Brown, D. E., 1972
4	S	Byrkit, 1968
2	S	Carr, D. B., 1972
4	S	Chandler, R. L., 1972
4	S	Cooney, 1970
2	S	Creswell, 1972
4	S	Davis, T. F., 1973
4	S	Gray, J. H., 1971
4	S	Hageltom, 1973
4	S	Irby, 1967
4	S	Jolley, 1972
4	S	Jorgensen, H. C., 1967
4	S	Kidd, 1972
4	S	Levine, M. F., 1971
4	S	Martinen, 1968
4	S	McDermott, 1967
4	S	Moore, T. R., 1972
2	S	Pro, 1972
4	S	Sachdev, 1972
4	S	Smith, E. P., 1970
4	S	Smith, S. N., 1968
4	S	Swadener, 1970
4	S	West, J. F., 1972
4	S	Wetter, 1966
4	S	Williams, W. E., 1973

In-service: procedures (cont.)

4	S	Wilson, H. L., 1967
4	S	Wood, N. E., 1969
4	S	Yates, 1972
4	S	Zeddies, 1972
6	S	Beberman and Van Horn, 1960
6	E/S	Cooney, 1971
6	S	Davison and Patrick, 1963
6	E	Dwight et al., 1966
6	E	Gall et al., 1971
6	S	Hively, 1968
6	E	McLeod, 1972
6	S	Runion, 1972

In-service: attitudes

3	E	Elsner, 1973
3	E	Huettig and Newell, 1966
3	E	Reys, 1967
3	E	Phillips, 1973
3	S	Allen, 1971
2	E	Babel, 1964
4	E/S	Crittenden, 1971
4	E	Donnelly, 1972
4	E	Elsner, 1973
4	E	Hamburg, 1972
4	E	Higdon, D. W., 1973
2	E	Koch, D. R., 1972
2	E	Manning, 1972
4	E	Nelson, P. A., 1969
4	E/S	Nugent, 1969
4	E	O'Neil, 1972
4	E	Pitkin, 1969
4	E	Raines, 1971
4	E	Rice, 1965
4	E	Schmelter, 1970
2	E	Singleton, 1972
4	E	Smith, E. M. R., 1971
4	E	Strand, 1973
4	E/S	Todd, R. M., 1966
2	E	Van de Walle, 1973
4	E	Wall, 1973
2	E	Wess, 1970
4	E	Wolfe, M., 1973
4	S	Allen, E. E., 1971
4	S	Boliver, 1972
4	S	Chandler, A. M., 1972
4	S	Cook, C. V., 1970
4	S	Crothamel, 1973
4	S	Haynes, J. O., 1970
4	S	Hodgin, 1967
4	S	Howe, 1967
4	S	Levine, M. F., 1971
2	S	Posamentier, 1973
4	S	Recker, 1966
4	S	Rettig, 1972
4	S	Short, 1972
4	S	Von Kuster, 1972
4	S	Wood, N. E., 1969
4	S	Zeddies, 1972
6	E/S	Dye, 1966
6	S	Rising and Ryan, 1966
6	E	Van de Walle, 1973

In-service: characteristics

1	E	Brophy, 1973
3	E	Gibney, Ginther, and Pigge, 1970
1	E	Pella, 1965
3	S	Chapin, 1970
3	S	Cooney and Henderson, 1972
3	S	Dessart, 1964
5	S	Fey, 1969
3	S	Flora, 1972
1	S	Gavurin, 1971
3	S	Hernandez, 1973
3	S	Hosford, 1973
3	S	Houston and Bentzen, 1969
3	S	Kerr, Alspaugh, and Reys, 1969
3	S	Kneitz, 1971
1	S	Long and Herr, 1973
3	S	Schmalz, 1973
3	S	Wolfe, 1972
4	E	Abshire, 1973
4	E	Backman, C. A., 1970
4	E	Biggs, 1969
4	E/S	Carter, I. L., 1971

In-service: characteristics (cont.)

2	E	Clover, 1972
4	E	DeRenzis, 1971
4	E	Dimeolo, 1969
4	E	Donnelly, 1972
4	E	Foisy, 1971
4	E	Fowler, 1973
2	E	Gardner, J. W., 1973
4	E	Gordis, 1973
4	E	Jones, B., 1973
4	E	Meckes, 1972
4	E	Newman, 1966
4	E	Nowak, A. T., 1971
4	E	O'Neil, 1972
2	E	Raeihle, 1972
2	E	Smith, G. W., 1971
4	E	Vinskey, 1971
4	E	Woods, M. C., 1971
4	S	Allen, E. E., 1971
4	S	Alspaugh, 1966
4	S	Barnes, W.E., 1970
4	S	Bertram, 1971
4	S	Bradshaw, 1968
4	S	Brunsvold, 1966
4	S	Carter, J. C., 1968
4	S	Elliott, 1971
4	S	Fey, 1969
4	S	Fields, 1970
4	S	Flora, 1970
4	S	Foster, T. R., lo72
4	S	Friedman, 1973
4	S	Gallagher, R. P., 1968
2	S	Hamner, 1971
4	S	Happel, 1973
4	S	Henry, L. L., 1972
4	S	Hernandez, 1970
4	S	Higdon, G. H., 1973
4	S	Hill, J. C., 1970
4	S	Hoeh, 1970
4	S	Hoffman, 1973
4	S	Hummel, 1973
4	S	Jackson, R. V., 1966
4	S	Jones, R. J., 1972
4	S	Jorgensen, H. C., 1967
4	S	Kennedy, 1964
4	S	Kneitz, 1969
4	S	Kysilka, 1970
4	S	Lockwood, 1971
4	S	Miller, E. J., 1971
4	S	Oliveira, 1971
4	S	Payne, N. M., 1972
4	S	Robitaille, 1969
4	S	Rove, 1968
4	S	Rudisill, 1973
4	S	Schaefer, M. G., 1967
4	S	Seeburger, 1965
4	S	Semilla, 1972
4	S	Smith, E. P., 1970
4	S	Smith, G. A., 1972
4	S	Smith, S. D., 1967
2	S	Smith, W. R., 1965
4	S	Sobelman, 1971
4	S	Stallings, 1969
4	S	Stilwell, M. E., 1968
4	S	Story, 1973
4	S	Strickmeier, 1971
4	S	Todd, H. W., 1973
4	S	Van Woert, 1970
4	S	Williams, W. E., 1973
4	S	Wilson, H. L., 1967
4	S	Wolfe, R. E., 1969
4	S	Wood, N. E., 1969
4	S	Woods, F. P., 1973
6	S	Berger, 1965
6	E	Carll and Davis, 1970
6	S	Mills, 1963
6	S	Rosenbloom et al., 1966
6	S	Skager, 1969
6	E/S	Torrance et al., 1966